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ABSTRACT

User charges are explored as an alternative source of finance for educational investment in Malawi. Two major issues are addressed: first, are families able and willing to pay; and second, what can users accomplish in terms of expanding the size of realized enrollment, given the public budget constraint. An analysis of data from primary and secondary schools; a review of the patterns of private expenditure on schooling; a description of the continuation rates under hypothetical future fee increases; and an examination of the willingness to pay from evidence of household enrollment and from economic rationale leads to a discussion of policy implications and conclusions. The empirical evidence suggests that (1) a moderate fee increase is unlikely to precipitate a large drop-out rate among students (primary and secondary) currently enrolled; (2) enrollments will increase due to the larger number of places made available because of the fee increase; and (3) increased fees are likely to have a stronger impact on lower income families; therefore, they should be linked with equity measures. Appendixes include a methodological explanation for the study and questionnaires for primary and secondary school pupils. References are provided. (RSL)

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User Charges for Education

The Ability and Willingness to Pay in Malawi

Jee-Peng Tan
Kiong Hock Lee
Alain Mingat

WORLD BANK STAFF WORKING PAPERS
Number 661

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Abstract

Investment in education is generally recognized to be essential for a country's long-term economic and social development. However, present macroeconomic conditions in many developing countries have obliged their governments to slow down increases in the allocation of public resources for education. As a result, the education sector is likely to develop only slowly, if at all; enrollment, already low in the poorer of the developing countries, would remain low, while the social demand for education would continue to be substantially unmet. In this setting, policy makers have recently focussed their attention on finding alternative sources of finance for education, one of which is the tapping of private household resources via user charges.

To mobilize resources by this method, we need first to address two main issues: firstly, are families able and willing to pay; and secondly, what can user charges accomplish in terms of expanding the size of realized enrollment, given the public budget constraint? Country-specific conditions are likely to influence the outcome of these questions, and obviously, they would determine the importance of user charges as a means of mobilizing private household resources.

In this paper, we attempt to answer these questions in the case of Malawi. The data used concern mainly primary and secondary schooling. The empirical evidence suggests that (i) a moderate fee increase is unlikely to precipitate a large drop-out rate among students (primary and secondary) currently enrolled. For example, a 10 percent increase in the average fees to enroll eligible children reduces the proportion enrolled per household merely from 0.58 to 0.55; (ii) even if some currently enrolled students do drop-out excess demand, particularly for secondary schooling, is large enough so that if the fee increease is associated with an increase in the supply of places, the overall number effectively enrolled would be larger than in the situation without the fee increase; and (iii) increases in fees are likely to have a stronger impact on lower income families, so that they should be linked with equity measures, such as a limited number of scholarships awarded on the basis of income and academic performance.

Extracto

En general, se reconoce que la inversión en educación es esencial para el desarrollo económico y social a largo plazo de un país. No obstante, las circunstancias macroeconómicas que existen actualmente en muchos países en desarrollo han obligado a los gobiernos de estos a incrementar las asignaciones de recursos públicos para educación en menor proporción que antes. Como resultado, es probable que el sector de la educación se desarrolle lentamente, si es que llega a desarrollarse; el número de alumnos matriculados, que ya es bajo en los países en desarrollo más pobres, seguirá siendo bajo en tanto que la demanda social de educación quedaría --en gran parte-- sin satisfacer. Dada esta situación, en los últimos tiempos los rectores de la política se han concentrado en encontrar otras fuentes de financiamiento para la educación, entre las cuales se cuentan los recursos privados de las familias, que se obtendrían mediante la imposición de cargos a los usuarios.

Antes de movilizar recursos por este método necesitamos, en primer lugar, las respuestas a dos importantes preguntas: en primer lugar, ¿están las familias en condiciones de pagar y dispuestas a ello? y en segundo lugar, ¿qué se puede lograr mediante los cargos a los usuarios en lo que respecta a aumentar el número de alumnos matriculados, dada la limitación del presupuesto público? Es probable que las condiciones que existan en cada país influyan en la respuesta a estas dos preguntas y que, evidentemente, las respuestas determinen la importancia de los cargos a los usuarios como medio de movilizar los recursos privados de las familias.

En este trabajo intentamos contestar estas preguntas en el caso de Malawi. Los datos usados corresponden principalmente a escuelas primarias y secundarias. Las pruebas empíricas parecen indicar que i) es poco probable que ún aumento moderado de los cargos provoque una tasa de deserción elevada entre los estudiantes matriculados actualmente (en escuelas primarias y secundarias). Por ejemplo, si el precio medio de la matrícula de niños calificados para asistir a la escuela aumenta en 10%, la proporción de niños matriculados por familia disminuye solamente de 0,58 a 0,55; ii) aun cuando algunos alumnos matriculados actualmente desertaran, el exceso de demanda --especialmente de plazas en escuelas secundarias-- es suficientemente grande, de modo que si el aumento de precio estuviera unido a un aumento de las plazas el número de alumnos matriculados sería mayor que si no se hubiera aumentado el precio, y iii) es probable que el aumento de precio afecte en mayor medida a las familias de bajos ingresos, de modo que tendría que ir unido a medidas equitativas, como el otorgamiento de un número reducido de becas sobre la base del ingreso de la familia de cada alumno y el desempeño de éste en sus estudios.

Il est généralement admis que les investissements dans le secteur de l'éducation sont indispensables au développement économique et social à long terme d'un pays. Toutefois, la situation économique générale de nombreux pays en développement est telle qu'ils ont dû se résoudre à ralentir le rythme d'accroissement du budget de l'éducation. Il est à penser que ce secteur ne se développera que lentement, si tant est qu'il se développe. Les effectifs scolaires, déjà peu importants dans les pays en développement les plus déshérités, demeureront faibles alors qu'une partie notable de la demande sociale d'éducation restera non satisfaite. Confrontés à ces problèmes, les responsables se sont efforcés, depuis quelque temps, de trouver d'autres sources de financement pour l'éducation. L'une d'elles consiste à faire appel au secteur privé en demandant une contribution financière aux familles.

Pour appliquer cette méthode, il faut d'abord répondre à deux questions : premièrement, les familles ont-elles les moyens de payer et sont-elles disposées à le faire; et deuxièmement, compte tenu des contraintes budgétaire de l'Etat, dans quelle mesure la contribution des familles permettrait-elle d'accroître les effectifs scolaires? La réponse à ces questions dépend vraisemblablement des conditions propres à chaque pays, et il va de soi que celles-ci constituent un facteur déterminant lorsqu'il s'agit de fixer le montant des contributions demandées pour mobiliser les ressources des ménages.

Le présent document cherche à analyser ces différents éléments dans le cas particulier du Malawi. Les données utilisées se rapportent essentiellement à l'enseignement primaire et secondaire. Les éléments d'appréciation disponibles permettent de tirer les conclusions suivantes : i) il est peu probable qu'un relèvement modéré des droits de scolarité entraîne une forte déperdition d'effectifs parmi les élèves actuellement inscrits (dans les établissements primaires et secondaires). Par exemple, si l'on augmente de 10 % des droits d'inscription moyens applicables aux jeunes remplissant les conditions requises, le ratio des enfants scolarisés par ménage ne diminue que de trois centièmes de point (0,58 à 0,55); ii) même si la contribution demandée amène quelques élèves à abandonner leurs études, la demande excédentaire - notamment dans l'enseignement secondaire - est suffisamment importante pour que l'on puisse néanmoins enregistrer une augmentation effective du nombre des inscrits, dans la mesure où le relèvement des droits de scolarité permet d'accroître le nombre de places offertes; et iii) l'augmentation des droits de scolarité aura vraisemblablement une incidence plus importante sur les familles à faible revenu; il faudrait donc prendre parallèlement des dispositions tendant à rétablir une certaine équité en octroyant, par exemple, un nombre limité de bourses dont l'attribution dépendrait du revenu familial et des résultats scolaires de l'élève.

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I. Introduction

In 1973 Jallade (1973 p.1) expressed concern about an eventual crisis in the financing of education in both developed and developing countries. A decade later this crisis seems much closer, if not already at hand, for some of the poorer nations.

The crisis emerges for the simple reason that the private demand for education far outstrips the supply of education. The strong relationship between education and earnings makes for a sustained demand for more and better education. In effect it spells demand for higher and more costly education, the corollary of which is an ever increasing pressure on governments to expand educational financing. Democratization of education serves only to exacerbate this pressure; the more access to education is viewed as a basic right, the more expensive it is to finance as the right is extended to those living in isolated areas.

Ideally both social demand 1/ and the noble goal of democratization should be met. In the real world, however, education must compete for limited public financial resources with a host of other economic activities of the government, such as programs for poverty alleviation, health and housing. This competition has become keener in recent years because the slow-down in international economic activity has affected growth rates in many LDCs. In this setting, substantial increases in public financing for education is unlikely, not least because investments in the sector typically require longer gestation than in other sectors.

In many respects Malawi's experience typifies the situation in many LDCs. First, the rapid growth in the demand for education which emerged with

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1/ That is, the sum of individual private desire to acquire schooling.

the political and economic events in the fifties has continued unabated (See Pike, 1968, pp. 214-217). Second, the sixties' goal of ensuring that all primary school children complete their education has given way, since 1971, to the goal of increasing access to at least primary education (see Nyasaland Government, 1962, p. 55 and Malawi Government, 1971, p. 94). Third, in the competition for limited public financial resources education appears to be losing ground. The proportion of public expenditure allocated to education has fallen sharply from 17 percent in 1970-71 to 12 percent in 1982-83. In absolute terms the amount allocated to education has increased, but hardly enough to match the increase in student enrollment, with the result that per student expenditures, in constant terms, has not increased. 1/

The financial constraints have obviously imposed severe conditions in the education sector, particularly at lower levels of schooling. In terms of student numbers, Malawi's primary gross enrollment ratio in 1980 was only 59 percent compared to 78 percent on average in Africa, and 86 percent for all LDCs (Unesco, 1982, Table 2.10). The secondary gross enrollment ratio was a mere 4 percent compared to the African and LDC average of 21 percent and 31 percent respectively. Moreover, existing physical resources in schools are being stretched to extreme limits, as is indicated, for example, by the student-staff ratio. In no region of the country is this statistic below 56.4 for primary schooling 2/, a ratio that compares very unfavorably even with the African average of 38.2 (Unesco, 1982). Perhaps the physical limitations

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1/ Prior to the increase in school fees in 1982, per student expenditure in constant prices remained unchanged at 14 kwachas at the primary level but fell from 216 kwachas to 206 at the secondary level between 1980 and 1981.

2/ The primary student-staff raio is 56.4 for the North, 63.8 for the Central Region, and 69.3 for the South. If only qualified teachers are taken into account, these ratios are even higher: 87.7 for the North, 100.6 for the Central Region, and 111.7 for the South (Malawi Government, 1981).

coupled with the tremendous social demand for schooling can be seen most clearly from the picture painted by Heyneman (1980, pp. 14):

> "...classrooms are dark and stuffy. Students are forced to squat on the ground and write by balancing an exercise book or slate on their knees. Teachers have no office; often no desk, and sometimes, not even a chair. Student desks, if available, often wobble on three legs; chairs have no backs; stools have but half a seat...only one pupil in eight was found to have a seat at all; and only one in 88 had a desk."

The poor conditions in themselves nevertheless provide at best a weak argument for increased allocation of public funds to the sector. A much stronger argument emerges, however, when one considers the returns to investment in the quality of education. These tend to be high because of the complementarity of educational inputs, particularly when the initial qualitative conditions are poor. Even in the absence of quality improvement, the returns to investment in education are high. For example, Tan (1983b) estimated that in Malawi, the social rate of return in 1983 was 18 percent for primary schooling, 30 percent for lower secondary schooling; 27 percent for upper secondary schooling; and 20 percent for university education. Echoing the pattern characterizing most LDCs, all these rates exceed the 10 percent yardstick commonly used to measure the opportunity cost of capital (Psacharopoulos, 1981). Clearly, they indicate that investment in education in Malawi is both economically justifiable and desirable.

However, additional government resources for the sector may not be forthcoming, given current constraints in the public budget, and the government's understandable desire for financial independence from external sources (Malawi Government, 1971, pp. 5). Under these circumstances, it may be necessary to generate the additional resources, or at least a part of them

from alternative sources. In recent discussions among policymakers and researchers (Thobani, 1983; Eicher, 1984), user charges have featured prominently as a means of tapping private household resources. Indeed in Malawi school fees had been raised in 1982 by as much as 50 percent at most levels; the new level of fees imply a recurrent cost recovery of 24 percent at the primary level, and 38 percent at the secondary level (see Tables A.1 and A.2).

Despite the large recent increases in fees, the financial needs and constraints of the education sector in Malawi are so great that they prompt the question of whether or not further fee increases can be imposed. The answer clearly rests on the willingness and ability of households to bear or accept further increases. At first sight, it would seem that households are probably unable to pay more, since it may be argued that current enrollments in Malawi are low precisely because families cannot even afford existing fees. Low enrollment, however, is not necessarily explained by inability to pay because in the case of Malawi, it reflects mainly the short supply of places. At the existing level of fees, there is in fact excess demand for education. Furthermore, it may be added that even if families are poor, they are not reluctant to finance their children's education through borrowing. Thus, although the Northern Region of the country is the poorest and least developed, (World Bank, 1982, pp. 138; see also Pike, 1968; and Malawi Government, 1971), it boasts higher enrollment rates than the Central and Southern Regions. 1/ Given this context, in assessing whether or not additional resources from private households can be tapped via further increases in user charges, this paper focuses more on evaluating their willingness to pay.

1/ The primary enrollment ratio in 1980 was 85 percent in the North, 54 percent in the Central Region and 49 percent in the South (World Bank, 1982, pp. 169).

To simplify, the willingness to pay concept involves two main considerations: the responsiveness of the demand for schooling to increases in the private cost burden, and the existence of excess demand at a given level of private cost. The steeper the demand curve, the less likely households are to withdraw their children from school when fees are raised. At the same time, the larger the difference between the demand for schooling and the supply of places (excess demand) the more readily are households to accept an increase in fees. In the aggregate, if households are willing to pay for education, an increase in fees linked with a simultaneous increase in the supply of places is more likely to lead to an expansion in overall enrollment rather than a decline. The fee increase would not affect substantially the enrollment of those already in school, but it would generate additional resources to provide places that would obviously be readily taken up by those not currently enrolled.

The purpose of this study is to provide an assessment of the private household willingness to pay for education. As in other analyses of this nature, the willingness to pay is difficult to measure directly; our evaluation thus relies on indirect evidence . These are presented below as follows. Section II describes the data which form the main basis of our analysis. Section III takes an indepth look at the existing levels and patterns of schooling expenditures that primary and secondary students already incur. Section IV contains a preliminary analysis of willingness to pay as indicated by students' assessment of whether or not they would continue schooling if they had to pay higher fees. Section V analyzes actual household enrollment responses to the burden of educational expenses, while Section VI further evaluates the willingness to pay for education by analyzing how families currently finance their children's education, and also private school attendance. Section VII provides an economic rationale for this willingness

to pay. Finally, Section VIII summarizes the principal findings, and discusses their implications for user charges as a means of cost recovery.

II. Data and Sample Characteristics

The data were raised in a March 1983 World Bank survey of 2000 Standard VIII pupils, and 500 Form II and 500 Form IV students in nine secondary schools. The sample represents approximately 2.8% of the universe of primary school pupils; and 6% of all secondary school pupils. 1/ Quota sampling was used to ensure adequate representation by sex, school types and region in the secondary school sample. For the primary school sample, the main sampling criterion was regional representativeness; beyond this, primary students were selected from clusters of schools which were within a thirty mile radius of the areas in which secondary school students were sampled. A wider geographical coverage was unfeasible due to the practical difficulties of coordination and travel to more distant schools.

The survey questionnaires raised information in the following areas: (i) pupils' family background; (ii) the private cost of attending school; (iii) expected and foregone earnings (only for secondary students); (iv) students' responses to contingency questions on hypothetical fee increases; and (iv) the number of respondents' siblings who are currently in school.

These data are useful for the purpose of our study, but several problems in using information provided by students should be noted. In the first place, the survey provides information only on those already in school. It contains no information on those of school age who were not enrolled at the time of the survey, thus introducing the problem of selectivity bias.

1/ See Appendix Table A.3 for distribution of the universe and sample populations of primary and secondary students.

However, since the data include information on students' siblings and their enrollment status, they provide an indirect source of information on those who are not enrolled. This information in fact permits analysis at the household rather than individual level and improves considerably our understanding of household behavior toward schooling. Thus this selectivity bias in fact poses no serious problem for the analysis below.

A second area of possible shortcoming is data accuracy, particularly where the survey question requires an answer that one would not normally expect a student to know easily; a prime example is father's income. But the problem of income data accuracy is also known to exist where information has been provided by household heads, although it probably arises for reasons other than ignorance. In our sample, the income variable is highly correlated with family asset ownership, which is presumably more accurately reflected in students' responses. Given this correlation, we have used income and asset ownership interchangeably as proxies for family wealth.

A third and perhaps more serious shortcoming is the fact that students' responses may not represent the views of their families, or of those who provide the financial support for their schooling. These views are particularly important in the context of this paper's analysis, since the focus is on <u>households</u>' willingness to pay for education services. In this regard, a household survey would have been preferable; in its absence, we urge our readers to exercise the necessary caution in interpreting the results.

III. Patterns of Private Schooling Expenditure

Although public education is heavily subsidized in Malawi, households do incur costs when they send children to school. Apart from opportunity costs, 1/ considerable direct cash outlays are involved. The data indicate that in government schools these outlays amounted to K41 p.a. (US$43) for Standard VIII pupils in 1983, and K220 p.a. (US$231) for secondary pupils. The corresponding cost for secondary pupils in aided schools was about the same, but it was much higher for those attending private school, amounting to K355 p.a. (US$372). In the context of Malawi's 1981 per capita income of US$200 (see World Bank, 1983) these levels of expenditure must be considered high. They represented 8 percent of the average level of father's income reported by pupils in the primary school sample; and about 25 percent that reported among secondary school pupils.

The itemized breakdown of students' expenditure appear in Table 1. For all students, the table shows that fees are only a part of their total expenses. For example, substantial amounts are spent on school attire, transport and incidentals. The high expenditure on uniforms and shoes compared to more directly pedagogical items, such as books and supplies, has been observed for other developing countries (Stromquist, 1982; Tan, 1983a). It is perhaps a reflection of the fact that (officially-specified) attire is often a prerequisite for enrollment whereas books are not. Thus when poverty limits what families can afford to spend on schooling, there is a natural tendency to spend only on those items that are institutionally required.

1/ Although this paper does not focus on opportunity costs, we note that these can be substantial for older students in school, particularly in rural areas. See, for example, Cain (1977) for a detailed account of the agricultural labor of children in Bangladesh.

Table 1: Mean Annual Private Expenditure (Kwacha) On Schooling By Level And School Type, Malawi 1983

Item	Standard 8 4/	Form II			Form IV		
		Private	Aided	State	Private	Aided	State
School Fees	4	85	38	31	83	33	27
Boarding Fees	0	32	34	55	42	45	56
Other Fees 1/	1	4	7	7	14	16	14
Books and Stationery	4	11	7	7	13	6	8
School Attire 2/	9	18	37	38	27	35	37
Transport	5	129	50	53	128	63	56
Incidentals 3/	18	62	39	28	61	34	23
All Fees	6	121	79	93	139	94	97
All Expenses	41	341	212	219	368	232	221

Note: Due to rounding, figures in the last two rows may not add up exactly to the corresponding rows in other parts of the table.

1/ Includes examination fees, contribution to school building fund, club and other fees.

2/ Includes uniforms and school shoes.

3/ Includes cost of spectacles, lunches and washing materials.

4/ Sample covered only state schools.

However, in a situation where the government does not have the financial capacity to compensate for the shortfall in expenditures on items directly related to school quality, it would be appropriate to reconsider the current policy (perhaps tacit) of requiring uniforms over books. That policy can effect a change in the private allocation of financial resources in the desired direction is seen in the (more balanced) pattern of expenditure among privately-enrolled secondary students; they spend on average K22 on uniforms and shoes and K12 on books, compared to K37 and K7 for corresponding items among state or aided school students.

Expenditure on transport is substantially higher among secondary than primary students. This is due mainly to the relative scarcity of secondary schools, which requires many secondary students to enroll in schools away from home. Privately-enrolled secondary students incur the highest transport costs, probably reflecting the fact that there is only one private secondary school in Malawi and its students are drawn from all parts of the country.

Variation in the expenditure of students in different sample sub-groups is shown in Table 2. For example, females tend to spend more; the main item accounting for the difference being incidentals. The expenditure of boarding secondary students is expectedly higher than day students' because of higher transportation costs. For the same reason, students attending schools located away from their home region incur a higher expenditure. In terms of socio-economic background, students from richer homes generally tend to spend more, although it is not always true that those who come from the most disadvantaged backgrounds spend least. Since the poorest students are likely to come from remote rural areas, their higher expenditure is possibly a reflection of the higher cost of attending school far away from home. Finally, it is interesting to note from Table 2 that there is a positive correlation between the number of persons providing financial support for

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Table 2: Mean Annual Private Expenditure On Schooling By Level And Selected Sample Characteristics, Malawi, 1983

	Kwachas	
	Primary 1/	Secondary 2/
Whole Sample	41	230
Sex		
Male	40	228
Female	45	236
School Type		
Boarding	-	243
Day	-	212
Level		
Form II	-	227
Form IV	-	234
Region of School		
South	49	242
Central	31	212
North	38	228
Attends School in Home Region		
Yes	-	224
No	-	248
Mother's Education		
No schooling	37	218
Incomplete primary	43	234
Completed primary	40	227
Incomplete secondary	49	207
Secondary and above	53	281
Father's Education		
No schooling	37	226
Incomplete primary	38	217
Completed primary	42	232
Incomplete secondary	46	261
Secondary and above	49	234
Father's Occupation		
Professional	32	259
Semi-Professional	36	257
Skilled Worker	45	244
Semi-skilled Worker	47	212
Unskilled Laborer	39	211
Unemployed	39	233
Family Asset Ownership		
High	47	247
Low	43	224
Father's Income (Kwachas)		
0 - 500	38	226
500 - 1000	46	208
1000 - 2000	49	231
Above 2000	79	224
Number of Persons Helping to Finance Schooling		
One	41	218
Two	37	237
Three or more	49	254
Family Engaged in Farming		
Yes	42	233
No	37	209

1/ Sample has only state school pupils.
2/ Includes both private and public school pupils.

schooling, and the reported expenditure. If one assumes that schooling expenditures are largely exogenously determined, as for example in the case of Tanzania (Tan, 1983a), then the correlation implies that as the required outlay increases, a student depends increasingly on more than one member of his or her (extended) family for financial support.

Although Table 2 provided some useful insights, the comparisons that it permits are at best only suggestive in the absence of standardization for all factors which might have influenced differences between the sub-groups. Furthermore, it does not distinguish between factors that are important as determinants of students' schooling expenditure, and those that are not. To overcome these shortcomings, we turn to regression analysis, using two dependent variables: a) total non-fee expenditure which covers expenses on textbooks, stationery, uniforms and transport; and b) total expenditure which is the sum total of non-fee expenditure and all forms of schooling fees. The independent variables have been chosen on the basis of a priori arguments and the bivariate results discussed above. A full description of all the variables appear in Appendix Table A.4.

The OLS estimates appear in Table 3. In general, the results confirm a priori expectations. First, in the case of primary schooling the significant determinants of non-fee expenditure are the location of the school (South), father's income and the pupil's own earned income (equation 1). All the coefficients have the expected signs. The largest single determinant is the pupil's own earned income. Almost 55 percent of the primary school pupils are engaged in some form of paid labor during their free time but of these over 99 percent are pupils beyond the normal schooling age of 5-12 years. Father's annual income, not surprisingly, contributes significantly towards the pupil's annual non-fee expenditure. The positive correlation coefficients for the dummy variables representing the location of the school - South and

Table 3: The Determinants Of Annual Primary And Secondary Schooling Expenditure, Malawi, 1983

Independent Variable 1/	Primary 2/		Secondary 3/			
	Non-Fee Expenditure	Total Expenditure	Non-Fee Expenditure		Total Expenditure	
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	13.76	19.22	157.37*	129.00*	228.93*	211.70*
	(0.47)	(0.72)	(5.21)	(4.05)	(6.79)	(6.12)
Personal Characteristics						
Male	-8.24	-11.64**	-16.33	-1.39	-17.73	-8.0
	(1.20)	(1.78)	(0.77)	(0.06)	(0.72)	(0.32)
Age	0.36	1.11	-		-	-
	(0.20)	(0.67)				
Form IV	-	-	-6.77	-5.01	-1.74	-0.47
			(0.41)	(0.30)	(0.09)	(0.04)
School Characteristics						
School located in Southern Region	18.45*	4.63	-	-	-	-
	(2.64)	(0.69)				
School located in Central Region	10.71	2.08	-	-	-	-
	(1.24)	(0.28)				
Boarding School	-	-	-	19.15	-	10.51
				(1.05)		(0.51)
Aided School	-	-	-11.91	-	-9.03	-
			(0.64)		(0.41)	
Family Background						
Mother completed primary school	7.97	9.04	-13.84	-18.70	0.38	4.15
	(1.03)	(1.23)	(0.75)	(1.03)	(0.02)	(0.20)
No. of siblings in school	-0.61	-3.13*	0.85	1.62	2.84	3.39
	(0.43)	(2.34)	(0.23)	(0.43)	(0.69)	(0.82)
Urban Residence	-9.14	1.82	-62.35*	-63.27*	-32.35	-31.91
	(0.96)	(0.19)	(2.86)	(2.90)	(1.23)	(1.22)
Father's Income ('000 Kwacha p.a.)	7.99*	14.03*	4.32	3.58	-3.18	-4.05
	(2.01)	(3.70)	(0.81)	(0.68)	(0.46)	(0.60)
Financing Circumstances						
No. of relatives providing support	0.46	0.72	-9.23	-8.42	-13.16	-12.87
	(0.15)	(0.29)	(1.16)	(1.06)	(1.54)	(1.51)
Own Income ('000 Kwacha p.a.)	24.57*	9.13	-12.35	-14.34	-15.37	-16.59
	(2.96)	(1.06)	(1.06)	(1.24)	(1.34)	(1.45)
Scholarship Amount (Kwacha p.a.)	1.88	0.85	0.07	0.05	0.28	0.29
	(1.63)	(0.79)	(0.20)	(0.13)	(0.71)	(0.75)
Mean of Dependent Variable (Kwacha p.a.)	32.96	33.67	108.34	108.34	185.97	185.97
N	510	309	192	192	148	148
R^2	0.05	0.09	0.07	0.07	0.05	0.05

Note t - statistics in parenthesis.

* significant at 5% level.

** significant at 10% level

1/ See Table A.1 for definitions of the variables.

2/ Sample contains only standard 8 pupils.

3/ Excluding private school students (see text for discussion).

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Central - of which only one is significant can be explained by the fact that the North is the poorest region. Also, contrary to the usual pattern in which school availability is positively correlated with income, there are fewer schools in the South and Central regions (see Heyneman 1972). Thus the higher expenditures of students in schools located in these regions may also be due to their higher cost of travelling to school.

Turning to the determinants of total schooling expenditure (equation 2, Table 3) only three variables exert a significant influence; father's annual income, the number of siblings in school, and sex. The positive significance of father's annual income is self-explanatory but the negative significance of the latter two variables calls for some explanation.

Regression analysis at this stage deals only with total expenses incurred by the individual student. In this context the negative effect of the number of siblings is due to several factors. First, for a given household income, although the absolute sum allocated to education is higher the larger the number of siblings in school, the average expenditure per child can be lower since the total amount allocated to education must be shared between a larger number of siblings. Second, there may be economies of scale in schooling expenditure. It is possible for school-going children in the same household to share schooling items such as textbooks and uniforms. Third, for a given household income, under Malawi's open system where no one is compelled to pay the full sum of schooling fees, parents are likely to pay less the more children they have in school. Judging by the large increase in the absolute value of the coefficient when school fees are included as part of total expenditure the third explanation may be of particular importance.

Males also incur significantly less expenditure on schooling than females, consistent with findings elsewhere (Tan, 1983a). This result may also be attributed to the fact that a high proportion of those repeating Standard VIII - overall repetition rate was 43 percent in 1980 (Unesco, 1982, p. 111-51) - are males. Since they are not compelled to pay the full amount of the school fees many are likely to repeat without doing so.

In the regressions for secondary school pupils, privately-enrolled students have been excluded because of the very small number of valid observations. For the remaining students, two sets of equations are presented for each of the dependent variables, one with the dummy variable "Boarding" and the other with the dummy variable "Aided". Due to the small number of schools represented in the sample, these two dummy variables could not be included in the same regression because of multi-collinearity problems. For the same reason, the school location variables have been dropped. Further, instead of using "Age" as in the primary school regressions, we have used "Form IV" to distinguish between older and younger students.

The two sets of equations yield similar results. In terms of non-fee expenditure, the only significant variable is the dummy variable representing urban residence (equations 3 and 4, Table 3). The negative correlation can be explained by differences in the availability and proximity of secondary schools between urban and rural centres. Secondary schools are mainly located in urban centers. In rural areas pupils are required to travel longer distances and they, naturally, incur higher transportation costs. In general, most of the other coefficients have the expected signs, but these are all not statistically significant. However, the coefficient on the "Male" dummy variable deserves some further explanation. In regression 3, its values is -16.33 compared to -1.39 in regression 4. This large difference arises from the choice of either "Boarding School" or "Aided School" to describe the

school attended. The instability is probably related to the fact that subsamples defined accordingly have sex-ratios which differ significantly.

In terms of total schooling expenditure, the two sets of equations also give rise to similar results (equations 5 and 6, Table 3). However, in this case none of the coefficients are significant though most have the expected signs. The dummy variable representing urban residence is still inversely correlated with schooling expenditure but it is no longer significant even at the 10 percent level. It is interesting to note that while economies of scale and other factors permit, in large families, a reduction in the per child expenditure for primary schooling, these considerations do not exert a similar effect at the secondary level. 1/

In the entire set of six OLS equations the results generally confirm a priori expectations. However, the most striking feature of the results lies in the very low values of the coefficients of determination, R^2; in no case does the R^2 reach 10 percent. It implies that the personal characteristics of the pupil, the characteristics of the school, the socio-economic or family background of the pupil, and the financing circumstances of the pupil collectively do not significantly affect the level of schooling expenditure. For both primary and secondary schooling, given that educational expenditure can take up as much as 20 percent of household income and the generally low income levels in Malawi, it is not surprising that parents, whatever their socio-economic status, do not spend much more or much less than that which is determined by external circumstances.

1/ Family size, and number of siblings of schooling age do not differ significantly between the primary and secondary samples.

IV. Continuation Rates Under Hypothetical Future Fee Increases

To assess the likely reaction to yet higher fees, the sample students were asked to evaluate whether or not they would remain in school after some hypothetical increases in school fees. 1/ It should be emphasized that, in the absence of household data, their answers serve only as a guide to actual outcomes since, as argued above, it is the household rather than the student that represents the decision-making unit.

Table 4 shows how changes in the school fees at state or aided school, ceteris paribus, might affect the decision of students to continue or terminate schooling at the current level of education. These are contingency responses (which may not coincide with the actual behavior) to fee increases ranging from about 48% to 640% at the primary level, and from 33% to 567% at the secondary level.

For all students, the proportion expecting to continue schooling at the current levels declines consistently with progressive increases in school fees. The effect is clearly larger at the secondary school level where existing fees are four and one-half times as high as at the primary school level. Looking at it from another viewpoint, with full recurrent cost recovery at the secondary level (266 kwachas per student in 1981/82) 90 percent of the students indicated that they would stop schooling. A similar cost recovery at the primary level (16.3 kwachas per student in 1981/82) shows a 'drop-out' rate of between 25 to 40 percent. Given the nature of the data, however, these high rates should be taken only as indicative signs of the impact of higher user charges, rather than as predictions of actual dropout rates associated with the higher charges.

1/ See question 34 in the primary school questionnaire; and question 36 in the secondary school questionnaire.

Table 4: Percent Of Students Expecting To Continue Schooling After Hypothetical Increase in Fee, Various Sample Sub-groups, Malawi, 1983

	Primary Students				Secondary Students			
Fees increase to	K10	K20	K30	K50	K40	K60	K100	K200
% Increase in Fees /1	48%	196%	344%	640%	33%	100%	233%	567%
Sample Characteristics								
Whole Sample	76.2	60.4	50.6	42.1	45.4	23.7	14.7	8.8
Sex								
Males	73.4	56.9	47.9	39.4	39.9	18.7	10.1	5.8
Females	82.9	68.9	57.3	49.4	57.0	33.8	24.4	15.5
Academic								
Repeaters in Primary School	76.8	59.7	50.2	41.9	44.2	22.7	13.6	8.0
Non-repeaters in Primary School	75.3	61.6	51.4	43.1	50.4	27.2	18.4	11.4
Repeaters in Sec. School	-	-	-	-	41.2	20.6	23.5	17.7
Non-repeaters in Sec. School	-	-	-	-	47.7	27.5	17.1	9.1
Aspiring to further Education	78.0	61.8	52.2	43.4	47.7	24.8	15.2	9.1
Not aspiring to further Education	55.3	42.9	35.1	31.3	35.9	18.8	12.3	7.7
Parents' Education								
Father completed Primary School	83.5	70.6	59.4	49.2	55.5	31.9	20.8	12.7
Father did not complete Primary School	70.2	52.6	44.2	37.3	38.0	16.2	8.7	5.2
Mother completed Primary School	85.9	74.4	64.2	56.4	59.8	37.9	25.2	16.1
Mother did not complete Primary School	73.7	56.8	47.1	39.0	40.0	17.3	9.5	5.4
Other Family Background								
High Asset Ownership	90.0	77.7	70.2	63.8	59.9	40.2	26.6	16.0
Low Asset Ownership	73.9	57.5	47.7	39.1	40.0	17.5	10.3	6.1
Urban Residence	88.6	76.0	67.3	54.9	56.1	34.0	22.3	13.2
Rural Residence	73.4	57.4	47.4	40.1	40.1	18.6	10.9	6.6
Family lives in Northern Region	67.1	47.8	35.6	29.7	45.6	22.8	16.1	10.8
Family lives in Central Region	79.6	63.2	53.8	44.4	47.4	25.0	13.9	7.9
Family lives in Southern Region	78.2	64.8	56.1	47.8	44.3	23.4	14.2	8.2
Financing Circumstances								
Financed chiefly by Father	79.9	63.7	53.7	44.2	52.2	29.6	18.9	11.9
Financed chiefly by other family sources	79.6	53.0	37.1	25.5	39.0	18.2	11.0	5.5
Financed by one relative	73.9	58.6	49.9	42.5	44.3	24.5	14.3	8.9
Financed by more than one relative	79.5	62.3	51.6	41.2	45.9	22.6	14.7	8.5
Financed through family sources	79.5	64.0	53.2	44.4	56.6	32.3	20.3	12.5
Financed through external loans	56.2	39.2	34.7	31.4	25.0	8.5	4.8	2.4

/1 In 1983 the tuition fee for standard VIII pupils in rural primary schools was K6 p.a.; and K7.5 p.a. in urban schools (See Table A.1). The percentage increase in fees is calculated on the basis of the average fee, that is, K6.76 p.a. The fee in state secondary schools was K30 p.a. in 1983.

The likelihood of continuing school following each successive hypothetical increase in fees varies according to sample subgroup characteristics. For example, it is higher among non-repeaters and students who aspire to further education. Table 4 also shows that there are significant differences across family backgrounds. The proportion likely to continue is higher among students with better educated parents, students for high-asset ownership backgrounds, students from urban centers, primary students living in the more developed central and southern regions of Malawi, and secondary students living in the northern region where the private school is located. In general, these differences can be explained in terms of opportunity costs and expected returns but, perhaps, more so in terms of differences in parental expectations and family income or wealth.

The contingency responses of students also vary according to how their education is financed. The chances of continuing school following a fee increase is higher among those whose education is financed by their fathers, than among those relying on other family sources. However, the likelihood of continuing does not vary systematically with whether or not more than one relative provide the financial support. As one might expect, the largest difference in the chances of continuing is between those who rely on family resources and those who rely on external (non-family) funds. Clearly, in evaluating their position, students recognize than some sources of financing are more reliable than others.

In order to examine the relative impact of educational, family, and financing factors on the likelihood of continuing schooling, regression analysis was used to extend the bivariate analysis discussed above. Contingency responses to successive fee increases at the primary and secondary levels here imply a 0-1 dependent variable representing whether or not a student expects to continue schooling at the corresponding new levels of

school fees. We use the logit model 1/ to specify the required relationship, that is

$$\text{Ln} \quad [P/(1-P)] = a + \underline{X}\,\underline{B}$$

or (1) $$P = 1/[1 + e^{-(a + \underline{X}\,\underline{B})}]$$

where P is the probability that an individual would stay on in school; a, the regression constant; $\underline{B}$, a vector of regression coefficients; and $\underline{X}$, a vector of independent variables. In this model, given the concern with equity, particular attention was focused on the economic resources available to the student - father's annual income, and the dependence of the student on external loans. Equation (1) is estimated by maximum likelihood techniques to obtain asymtotically efficient and consistent parameter estimates.

The regression results appear in Table 5. Their most striking feature lies in the "right" sign and persistent significance of the economic resource variable. In all the estimated equations, father's annual income has the expected positive influence on the probability of continuing schooling, while dependence on external loans exerts the expected negative influence. In the primary school sample, the strength of the income variable declines with each successive increase in user charge, whereas in the other sample, the opposite is true. An explanation for this difference lies in the fact that the secondary sample differs significantly from the primary sample in terms of family background composition; in particular, it contains students largely from higher income families. 2/ At successive increases in fees, the

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1/ See (Amemiya, 1981) for a description of the model's statistical properties and examples of its applications.

2/ In the secondary sample, mean father's annual income was K1390, with standard deviation of K1960; in the primary sample, the corresponding statistics were K550 and K710.

perceived financial burden is large enough to reduce socio-economic difference within the primary sample, whereas in the other sample, these differences are enhanced. For both primary and secondary students, however, the influence of dependence on external loans declines as fees are hypothetically raised. This result implies that with higher fees, even students who do not currently borrow would be affected.

The other factors which are statistically significant, and which have the expected signs include, for the primary sample regressions, sex and aspiration to the next level of education; and for the secondary sample regressions, sex and repeater status. Males have a greater probability of terminating schooling than females, ceteris paribus, possibly, reflecting their higher opportunity cost of schooling. The coefficient of the variable "aspire to next level of educations" is positive, but does not vary in a consistent pattern as fees are raised. This result may be due to the small number of pupils not aspiring to higher levels of education in the primary sample (N=55). Repeaters in secondary school are less likely than non-repeaters to continue schooling at each level of hypothetical user charge, but the coefficient becomes statistically insignificant beyond the K60 level. This result is not unexpected. Repeaters are likely to feel the "pinch" of fee increases more than non-repeaters, since they are already experiencing a higher loss in foregone earings, but as the amount by which fees are hypothetically raised is increased, both groups would ceteris paribus, be equally affected.

Apart from the coefficients of the independent variables, another striking result is the decline in the fit of the regressions for both samples. The D-value, which is approximately the equivalent of R^2 in OLS regressions (Harrell, 1980), declines from 0.08 to a mere 0.04 in the primary

Table 5: Maximum Likelihood Estimate Of The Determinants Of Expectations Of Staying On In School When Fees Are Hypothetically Raised To Various New Levels, Malawi, 1983.

	Primary School Students					Secondary School Students 3/				
	Sample Mean	Dependent Variable = Expectation Of Staying On In School 1/				Sample Mean	Dependent Variable = Expectations Of Staying On In School 1/			
Fees Are Hypothetically Raised To % Increase in Fees 4/	-	K10 48%	K20 196%	K30 344%	K50 640%	-	K40 33%	K60 100%	K100 233%	K200 567%
Independent Variables										
Intercept	-	0.09 (0.22)	0.05 (0.10)	-0.57 (1.42)	-0.83* (2.04)	-	0.85 (1.32)	0.24 (0.37)	-0.31 (0.41)	-2.20* (2.12)
Male	0.74	-0.36** (1.70)	-0.32** (1.69)	-0.08 (0.44)	-0.18 (1.00)	0.73	-0.83* (2.17)	-1.10* (2.89)	-1.25* (3.02)	-0.98** (1.92)
Repeater in Primary School	0.84	0.14 (0.62)	-0.10 (0.45)	-0.11 (0.52)	0.13 (0.59)	0.71	-0.55 (1.49)	-0.34 (0.88)	-0.35 (0.83)	-0.43 (0.84)
Repeater in Secondary School	-	-	-	-	-	0.09	-1.13** (1.72)	-1.24** (1.73)	-0.25 (0.37)	0.29 (0.37)
Aspire to Next Education Level	0.93	1.03* (3.48)	0.47 (1.57)	0.56** (1.83)	0.33 (1.05)	0.80	0.46 (1.10)	0.13 (0.26)	-0.03 (0.10)	0.78 (0.97)
Father's Income ('000 Kwachas p.a.)	0.55	0.50* (2.86)	0.40* (2.84)	0.36* (2.82)	0.37* (2.92)	1.39	0.16** (1.67)	0.20* (2.34)	0.20* (2.35)	0.26* (2.84)
Urban Residence	0.13	0.38 (1.13)	0.25 (0.92)	0.24 (0.91)	-0.01 (0.00)	0.26	-0.24 (0.57)	-0.27 (0.65)	0.06 (0.14)	0.05 (0.10)
No. of Siblings in School	2.83	0.04 (0.81)	0.05 (1.17)	0.04 (1.14)	0.04 (1.14)	3.28	0.02 (0.36)	0.03 (0.42)	0.05 (0.55)	-0.09 (0.75)
Supported Chiefly by Father	0.67	0.23 (1.26)	0.10 (0.61)	0.09 (0.51)	0.03 (0.17)	0.54	0.42 (1.22)	-0.16 (0.42)	-0.48 (1.13)	0.41 (0.76)
Depends on External Loans for Schooling	0.17	-0.95* (4.55)	-0.99* (4.88)	-0.87* (4.16)	-0.70* (3.25)	0.39	-1.74* (4.75)	-1.58* (3.51)	-1.11* (2.17)	-0.34 (0.32)
Mean of Dependent Variable	-	0.77	0.59	0.50	0.41	-	0.49	0.28	0.19	0.12
D - value 2/	-	0.08	0.07	0.06	0.04	-	0.22	0.17	0.14	0.11
- 2 log likelihood	-	789.78	895.85	893.41	891.84	-	224.57	198.63	164.42	120.31
N	-	788	702	675	680	-	200	200	200	199

Note: Asymtotic t - statistics in parenthesis, * = significant at 5%, ** = significant at 10%.

1/ The values reported are the estimated Beta coefficients.

2/ This statistic is approximately the equivalent of R^2 in OLS regression (Harrell, 1980).

3/ Sample excludes privately enrolled students.

4/ In 1983 the tuition fee for Standard VIII pupils in rural primary school was K6 p.a. and K7.5 p.a. in urban schools. The percentage increase is calculated on the basis of the average fee, that is, K6.75 p.a. The fee in state secondary school was K30 p.a.

school sample, and from 0.22 to 0.11 in the secondary school sample. Clearly, the independent variables used here do not explain completely the decision to continue or to terminate schooling at successively higher levels of user charge. Other factors such as school quality, and peer-group influence may be important but cannot be accounted for in this study. Nevertheless, the two important findings so far are: a) the proportion likely to drop-out due to a rise in school fees increases with successive increases in school fees; and b) the likelihood of continuing schooling in the face of higher school fees, and therefore the willingness to pay, varies directly with socio-economic background.

V. Willingness to pay: Evidence From Household Enrollment Behavior

Although the discussion above provides some useful indications of the enrollment impact of future fee increases, we cannot place too much confidence on the results. Not only do the data reflect what are at best guesses, they are also obtained from students whose opinions may not necessarily reflect their parents' views. In analysing willingness to pay, it is probably more appropriate to use the family or household as the basic decision-making unit for several reasons. First, the individual student of primary, and even secondary, school age is often too young to make such decisions on his/her own behalf. Second, since the individual student is often not the only child of school-going age in the family decisions on education must be made within the family or household context. This is particularly relevant in developing countries where more education for an eligible child often means less or no education for another. Moreover, it is the family or household rather than the individual that provides the financial support for education. 1/

1/ The appropriateness of the household decision-making framework has also bee emphasized elsewhere; see for instance Birdsall and Cochrane (1982).

In practical terms, the question of whether or not households are willing to pay for education can be stated as follows: given that there are certain direct private costs associated with the education of a child, to what extent is the proportion of eligible children enrolled influenced by such cost considerations? A related question is, if the financial burden is increased, for example, as a result of fee increases, would the household enrollment ratio drop, and by how much?

To attempt answering these questions, we estimate an equation based on the assumption that the household maximizes a utility function which has, as one of its "commodities", the proportion of eligible children enrolled in school (P). Within this framework, the objective would be to educate all eligible children. However, the household faces a budget constraint, and is forced to allocate its resources between education and all other "commodities" which feature in its utility function. In the short-run, the household cannot alter the number of children eligible for schooling, nor its budget. Thus the household makes a decision on P based partly on an assessment of the burden it would have to bear if all eligible children were to be enrolled, given its budget constraint and other socioeconomic background factors which circumscribe its tastes and aspirations. It should be emphasized here that the hypothesized relationship is not a demand function in the usual sense of a price-quantity relationship. Rather, it is more appropriately viewed as a household enrollment ratio function showing how the perceived total financial burden of schooling affects households' actual decisions about the proportion of its eligible children who will be enrolled.

In the empirical analysis, we estimate a linear approximation of the function using OLS. In particular:

$$(2) \qquad P = a + B_t \cdot \mathrm{Ln}(X_t) + \sum_{i \neq t} B_i \cdot X_i$$

where P is the proportion of eligible children enrolled in school (household enrollment ratio); X_t is the financial burden associated with enrollment of all eligible children; and X_i is the i^{th} variable in a vector representing the influences of socioeconomic background and the household's budget constraint. 1/ X_t has two components: fees only and other schooling expenses.

Most of the regression variables are readily available from the data gathered in our survey of primary and secondary pupils. However, the data on P and X_t had to be constructed from the information provided by the students. For each pupil, we know his/her age, the number of older and younger siblings, and the number of siblings in school. Assuming a given birth inteval, it is possible to derive the number of children in the students' family who are in the age interval 5 to 23; 2/ siblings in this age interval are considered to be eligible for schooling. Thus P is given by

(3) P = (No. siblings in school)/(No. siblings in age interval 5-23).

To construct X_t, we first obtain the ages of the pupil's siblings based on the same birth spacing assumption. The cost of each sibling's education, given his/her age, is obtained by multiplying the likelihood of being in one of three education levels, primary, lower and upper

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1/ Alternative specifications were experimented with, but in general the results were inferior; for example the R^2 value was lower when the following equation was estimated:

$$P = a + B_{t,1} \cdot X_t + B_{t,2} \cdot X^2 + \sum_{i \neq t} B_i \cdot X_i$$

See also Appendix A for a comparison with the following form:

$$\text{Ln } [P/(1-P)] = a + B_t \cdot \text{Ln}(X_t) + \sum_{i \neq t} B_i \cdot X_i$$

2/ 99 percent of the students in Malawi fall within this age range; see Malawi Government, 1980, Table 3.3. pp. 166.

secondary, 1/ with the cost associated with enrollment at each of these levels. A distinction is made in the cost facing those living in urban and rural areas. To summarize, the cost burden for enrolling all eligible children is given by:

$$(4) \qquad X_t = \sum_{i=5}^{23} \sum_{j=1}^{3} C_i . S_j . F_j$$

where $\sum_j S_j = 1$;

$C_i = 1$ if there is a child of age i in the family; 0 otherwise;

S_j = probability of being in j^{th} level of schooling; and

F_j = expenses required to attend j^{th} level of schooling.

Table 6 reports the regression results based on the assumption of one-year birth spacing between siblings. The independent variables used are defined in Appendix Table A.4. In general, the results confirm a priori expectations. Moreover, they remain largely unaffected when the one-year birth spacing assumption is changed to two years, and three years. These sensitivity results are reported in Appendix Table A.5. As indicated in the methodological note in Appendix A, there are theoretical reasons to suspect the existence of heteroscedasticity in the regressions. As it turns out, however, this is not a very important problem in the sample. This assessment has been checked using the two-step weighted least squares method (Aitken's generalized least squares method), which shows that the value and statistical significance of the regression coefficients remain largely unaffected after correcting for heteroscedasticity. For example, the coefficient of Ln(Total

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1/ This likelihood distribution is derived from the 1976 National Census. The advantage of using the national probabilities is that it indirectly allows for the fact that enrollment at any level of education depends on the student having passed the previous level.

Table 6: OLS Estimates of the Determinants of the Proportion of Eligible Siblings Enrolled, Malawi, 1983

Spacing Among Siblings Assumed to be One Year	Dependent Variable = P [1] Primary Sample (A)	Secondary Sample (B)	Both Samples (C)	Dependent Variable = Ln [P/(1-P)] [1] (D) [2]	(E) [3]
Independent Variables					
Intercept	2.17 * (19.11)	2.73 * (10.81)	2.32 * (21.97)	6.82 * (16.74)	8.74 * (17.83)
Ln (Total Cost)	-0.28 * (14.57)	-0.35 * (8.39)	-0.30 * (16.89)	-1.12 * (16.34)	-1.42 * (17.19)
Father's Income ('000 Kwacha p.a.)	0.002 (1.46)	0.009 (0.902)	0.01 (1.49)	-0.03 (0.92)	-0.04 (0.97)
Mother Completed Primary School	0.11 * (4.75)	0.08 ** (1.89)	0.11 * (5.21)	0.51 * (6.49)	0.60 * (6.34)
Urban Residence	0.07 * (2.46)	0.19 * (4.22)	0.12 * (4.91)	0.53 * (5.59)	0.61 * (5.40)
Resident in Northern Region	0.07 * (3.15)	-0.01 (0.36)	0.03 * (2.09)	0.14 (1.93)	0.13 (1.49)
Proportion Girls Among Siblings	-0.02 (0.42)	-0.27 * (2.97)	-0.08 ** (1.94)	-0.19 (1.17)	-0.31 (1.55)
Number of Relatives Providing Support	-0.05 (0.54)	0.04 * (2.67)	0.01 (1.10)	0.009 (0.31)	0.004 (0.11)
Depends on External Loans for Schooling	0.02 (0.94)	0.02 (0.37)	0.02 (0.94)	0.11 (1.42)	0.14 (1.44)
Secondary Sample	- -	- -	0.08 * (3.55)	0.39 * (4.55)	0.45 * (4.36)
Sample Mean Value of P [1]	0.56	0.65	0.58	0.58	0.58
N	1064	391	1455	1455	1455
R^2	0.20	0.25	0.22	0.22	0.23
Elasticity of P w.r.t. (Total Cost) [3]	-0.50	-0.53	-0.52	-0.47	-0.60

Note: * = Significant at 5% level; ** = Significant at 10% level.

1/ P is defined as the proportion of children of eligible ages who are enrolled.

2/ For observations for which P is not in the range (0<P<1), the value of the dependent variable Ln [P/(1-P)] is calculated by assigning P = 0.97 in equation (D); and P = 0.99 in equation (E). There are no observations for which P = 0.

3/ In regressions (A), (B), and (C), elasticity is evaluated at the sample mean value of P according to $\frac{\partial P}{\partial X_i} \cdot \frac{X_i}{P} = \beta_i$ where B_i is the coefficient on the Ln (Total Cost) variable; in regressions (D) and (E), it is given by $B_i.(1-P)$.

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Fees) charges from -0.30 to -0.22 in equation (C) of Table 6, both coefficients being statistically significant at 1 percent.

Focussing on equations (A) to (C) in Table 6, the most interesting finding is that the cost burden exerts a negative and statistically significant effect (at the 1 percent level) on household enrollment. From the construction of X_t in equation (4) above, it is possible that the effect is due entirely to variations in the number of eligible children in each household, and their age composition. However, when the influence of cost is excluded by assuming a uniform cost for all educational levels in calculating X_t, the corresponding regressions had lower R^2's; for example, the latter statistic dropped from 0.22 to 0.18 for regression (C) in Table 6. This experiment provides indirect evidence confirming that, apart from household size and age composition, the existing cost structure is also an important influence determining the actual number of eligible children that households enroll.

Other variables which are statistically significant at the 10 percent level, or better include family background characteristics such as mother's education, urban-rural and Northern residence, and proportion of girls among the household's children. Not surprisingly, the proportion of children in school is higher in households with better educated mothers, and the effect is reinforced in urban households. The influence of father's income has the expected positive sign, but is statistically significant only in equation (C). Residence in the Northern region is associated with higher enrollment ratios, possibly reflecting the educational tradition in this part of the country (see Heyneman, 1972). However, the effect is present mostly in the primary sample, which consists of households more likely to have children of primary school age. In the secondary sample, where the children are older, the absence of this effect is possibly a reflection of the poorer access to

secondary schooling in the North. The regressions also show that the higher the proportion of girls, the lower is the household enrollment ratio. This negative association, while negligible for primary schooling, is relatively large, and statistically significant for secondary schooling, as a comparison of equations (A) and (B) in Table 6 indicates. The lower access of girls to secondary schooling is confirmed by the national statistics (Malawi Government, 1981) which show that whereas girls form 41 percent of total primary enrollment, they represent only 29 percent of secondary enrollment.

Turning to equations (D) and (E) in which the dependent variable is Ln [P/(1-P)] 1/ instead of P, it is apparent that this alternative specification does not alter the results discussed above, although for methodological reasons elaborated in Appendix A, the specification of equations (A) to (C) is preferable.

In the absence of direct measures, the willingness of households to bear additional financial burden for their children's education can only be assessed indirectly. The regression estimates above, based on cross-sectional data, provide a fair approximation to the time-series behavior of households in response to an increase in the financial burden. The weaker is the relationship between actual enrollment and total financial burden facing the household, the smaller would be the drop in enrollment following a rise in the cost of education to the household, or, correspondingly, the greater its willingness to accept the cost increase. To summarize this relationship, we define an elasticity statistic 2/ which is given as the percentage decline in

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1/ The estimated equation is thus $\text{Ln}\,[P/(1-P)] = a + B_t.\text{Ln}(X_t) + \sum_i B_i.X_i$

2/ This definition is not exactly the same as that of the usual price or income elasticity.

the proportion of eligible children enrolled following a one percentage rise in the total fees associated with enrolling all eligible children in the household, or equivalently, a one percentage rise in the average fees to enroll each eligible child. Table 6 shows that in all the regressions, the estimated value of this elasticity statistic is around -0.5. The meaning of an elasticity of this magnitude can be illustrated as follows: at the sample means of total cost (k439) and household enrollment ratio (0.58), a 20 percent increase in cost implies that the household enrollment ratio would decline to 0.52. Thus the regression results suggest that, ceteris paribus, the negative impact of moderate fee increases on household enrollment is quite small. Moreover, since fees are only about one-eighth of total schooling costs, increases in this element of private costs would probably not reduce enrollment substantially.

Table 7: Simulation of the Enrollment Impact of Secondary School Fee Increases on Those Currently Enrolled

Level of Secondary School Fees	Implied Total Cost 1/ to Enroll All Eligible Children	Proportion of Eligible Children Enrolled per Household
30 1/	439	0.58
45	454	0.57
60	469	0.56
90	499	0.54
120	529	0.52
150	559	0.50
210	619	0.46
240	649	0.44
270	679	0.42

1/ At the sample mean, families have 6.73 children eligible for schooling, of whom one is eligible for secondary schooling.

The simulations in Table 7 show the implication of different levels of secondary school fees on household enrollment, keeping constant fees for primary schooling and all other costs. We concentrate on fees for secondary schooling as the potential for charging higher fees for this level of education appears to be greater compared to primary education. 1/ In a household context, it is likely that the raising of fees for one level of education may affect the enrollment status of siblings at other levels of schooling. The results of the simulations confirm, however, that not many of the students currently enrolled, either in primary or secondary schools, would drop out following an increase in secondary school fees.

We turn now to examine the impact of fee increases on overall enrollment. We shall again concentrate only on fee increase for secondary schooling. The elasticity estimate discussed above can be used to derive the slope of the demand curve. An estimate of the excess demand 2/ for secondary schooling allows us to simulate its location in a fee-enrollment plane. Assuming that additional revenues from fees are used by the government to expand the provision of secondary education, the effective

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1/ For example, the private rates of return to secondary schooling is much higher that for primary schooling, as we show later in this report.

2/ The extent of excess demand was estimated according to the following statistics (Malawi government, 1981) and assumptions: in 1979/80, 65,007 students were enrolled in Standard VIII, of whom 59,434 sat for their PSLC examination. 43,767 passed, and of these 5,260 proceeded to Form I. The number who did not sit for the PSLC examination was therefore 5,573, and the number who failed in the examination was 15,667. In 1980/81, the number of repeaters in Standard VIII was 30,559. Assuming that all those who did not sit and all who failed the PSLC examination in 1979/80 repeated standard VIII in 1980/81, the number of repeaters who already have their PSLC is 9,319 (30559 - 15667 - 5573). This figure is obviously an under-estimate of the number of PSLC holders who are seeking admission in secondary school. Based on this conservative estimate, only one-third of the expressed demand for secondary education is satisfied. In other words, at the current level of fees, the expressed demand is 50,000 whereas the current provision is for only 17,000 students

supply of places can be simulated.[1]/ In Figure 1 below, the initial characteristics of secondary education in Malawi are represented by points A and B; at the current fee of K30 p.a., the actual realized enrollment is 17,000 (Point A), while the potential demand is estimated at 50,000 (Point B). When fees are increased, the potential aggregate demand diminishes, while the possible provision of places increases. The graph shows that it would be necessary to increase the fees up to K173 p.a. to reach a situation where demand is exactly matched by the supply of places.

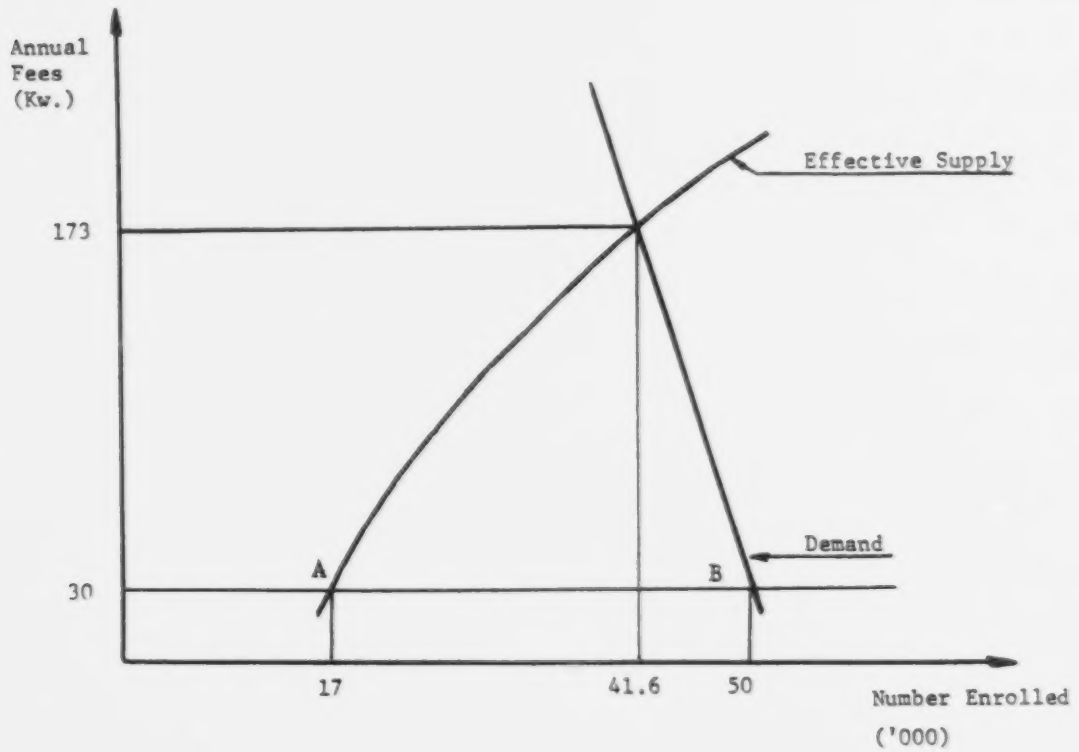

Fig. 1: Simulation of the Impact of Increases in Secondary School Fees on Realized Enrollment

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1/ According to the following equation: N = B / (C-F)
where N is the number of places; B, the public budget allocated for secondary education, assumed to be exogenous; C, the unit cost for secondary education; and F, the fee per student.

With this increase in fees, the overall realized enrollment would increase from 17,000 to 41,600. In the extreme situation where the provision of places is kept at 17,000, it is likely that fees as high as the full cost recovery level of K266 p.a. would not cause any decline in the current aggregate level of secondary enrollment in Malawi.

In the foregoing analysis, we have been concerned only with the aggregate size of enrollment. The raising of fees is also likely to affect equity in that poorer students may have to withdraw from school. As a result, their representation in the increased student population of 22,600 may be lower than before. To mitigate this adverse effect, it would be necessary to provide needy and deserving students with scholarships or bursaries. These schemes could conceivably be financed from the additional resources from higher fees.

Another factor that is not explicitly considered is variation in school quality which may have an impact on enrollment decision. 1/ However this variable is unlikely to change in the short run since it takes time to improve school quality; but if improvements do occur in the short run, they would reduce further the already low elasticity of household enrollment with respect to fee increases.

The simulations in Figure 1 depend basically on the empirical results of the household enrollment model which showed that families would be unlikely to withdraw their children from school when fees are raised. The validity of the low responsiveness of enrollment to fees can be documented by other pieces of evidence to which we now turn in Section VI below.

1/ Birdsall (1983) finds a positive but not statistically significant effect of school quality variables on enrollment.

VI. Further Evidence on the Willingness to Pay

a) Sources of Private Financing and Dropout Rates

In April 1982 the Malawian Government increased user charges in both primary and secondary schools. Primary school fees in rural areas were raised by 50 percent, and in urban centres by 43 percent in grades 1-5 and 15 percent in grades 6-8. Secondary school fees went up by 50 percent while boarding charges in grant-aided and boarding schools were raised by 150 percent (see Table A.1).

Central to the issues here are two basic questions: a) what are the sources of educational financing for the pupil, and b) what had been the effects of the rise in user charges on attendance and educational financing. The answers to these two questions clearly differ between socio-economic groups. To provide a clearer picture the samples have been divided into two groups - high asset and low asset. High asset group pupils come from families with at least a motorized vehicle (scooter, car or truck) while the low asset group pupils come from families without any motorized vehicle ownership. The former accounts for 13 percent of the primary school sample, and 26 percent of the secondary school sample.

Table 8 provides a summary of the data relating to the two basic questions. Educational financing in Malawi, at the primary and secondary levels, comes essentially from within the family, within the extended family system, scholarships and external loans. At both the primary and secondary levels nearly three-fourths of the pupils in the high asset group had their

Table 8: Percent Relying On Various Sources Of Educational Finance And Mean Dropout Rate Among Respondents' Siblings Due To Recent Fee Increase, Malawi, 1983

	Scholarship Recipient	Schooling Financed Chiefly by Father 3/	Schooling Financed by More than one Relative	Schooling Financed Through External 1/ Loans		High Fees Cited as reason for External 1/ Financing		Mean Dropout Rate Due to Fee Increase in 1982-3
				1981	1983	1981	1983	
Primary Students								
High Asset Group 2/	9.5 (253)	74.8 (222)	37.3 (252)	8.0 (249)	10.8 (251)	40.0 (20)	63.0 (27)	1.7 (212)
Low Asset Group 2/	10.2 (1669)	64.1 (1436)	39.6 (1685)	16.6 (1642)	17.7 (1665)	50.7 (272)	59.2 (294)	1.4 (1074)
Secondary Students								
High Asset Group 2/	6.6 (229)	74.4 (199)	50.0 (236)	12.8 (235)	17.1 (234)	60.0 (30)	75.0 (40)	4.3 (209)
Low Asset Group 2/	15.7 (401)	52.6 (312)	54.5 (409)	39.7 (403)	40.3 (402)	50.6 (160)	72.8 (162)	7.8 (320)

1/ Outside the (extended) family.

2/ High Asset Group students belong to families which have at least a motorcycle or car; Low Asset Group students, to families which have only a bicycle or no vehicles at all. This distinction coincides roughly with the distinction based on other criterion, such as reported father's earnings, and ownership of business or home.

3/ Excludes observations with deceased father.

Note: The number of observations is enclosed in parenthesis.

education financed mainly by their fathers, i.e. within the family. On the other hand, among the low asset group only two-thirds in the primary school level had their education financed mainly by their fathers. A sharper contrast can be seen at the secondary level, where education is some five and one-half times as expensive; only one-half of the poorer pupils had their education financed within the family unit.

Educational financing also comes from within the extended family system for a large proportion of the pupils. At the primary level about two-fifths of the pupils have part of their educational expenses met by other members of their families and also by their relatives; the proportion is marginally higher among pupils from low-asset families. As expected, given the higher cost of secondary schooling, the proportion of pupils at the secondary level relying on more than one family or extended family member for their educational expense is much larger. Among both groups of pupils over one-half rely on more than one family member for their educational support.

Students in both asset groups also rely on external sources of funding to cover their educational expenses. Although, in contrast to many other African nations, Malawi allocates only a small portion of its educational budget to scholarships, about 10 percent of the pupils, in both the high and low asset groups, at the primary level receive some scholarship. Among secondary school pupils only 7 percent from the high asset group receive scholarships. In contrast over 15 percent from the low asset group were awarded some scholarship.

The data in Table 8 also indicate that some students also had to rely on external loans; and the proportion who did so increased with the increase

in user charges (fees). Among those who relied on external loans for various reasons the proportions are, as expected, lower among primary school pupils than secondary school pupils but the greater contrast lies between the high asset group and the low asset group at both levels. Among the primary school pupils only 8 percent from the high asset group relied on external loans compared with almost 17 percent in the low asset group. This contrast is even greater at the secondary level; less than 13 percent from the high asset group relied on external loans compared with a startling 40 percent in the low asset group. With the rise in school fees, and in boarding charges at the secondary level, the proportions relying on loans at both primary and secondary levels increased, though only marginally. This would seem to indicate that the increases in user charges did not cause a significant increase in family indebtedness to external sources. The data in Table 8 shows, however, that high fees increased in importance as a reason for borrowing following the 1982 rise in fees. At the primary level, among the high asset group, the proportion citing this reason for borrowing increased by 23 percentage points to 63 percent; and for the low asset group, by 9 percentage points to 59 percent. For the secondary school pupils the proportion among the high asset group rose by 15 percentage points to 75 percent, while among the low asset group the proportion rose by 22 percentage points to 73 percent.

Whatever the private financing arrangements, however, the 1982 increase in fees did not appear to have had a very large effect on the proportion of children in each family who stopped schooling. 1/ The dropout

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1/ Students were specifically asked about siblings who dropped out because of the recent fee increase. However, it is unlikely that they can distinguish between situations where siblings dropped out for financial or other reasons. Moreover, since nothing is known about the drop out rate in the year before, it would be unwise to attribute the reported incidence of dropping out entirely to the increase in user charges.

rate is defined here as the number of siblings who stopped schooling, at the primary or secondary levels because of the rise in user charges, expressed as a ratio of the total number schooling in the previous year. For the primary school sample, this statistic is below 2 percent for both asset groups. In the secondary sample, where students are likely to have more siblings of secondary school age, the dropout rate is expectedly higher because of the higher expenses involved. Nevertheless, the figure is still only 4 percent for the high asset group, and 8 percent for the low asset group.

The impression which emerges is that households are generally willing to pay at least the curent levels of user charges for the education of their children. With the introduction of additional school fees or user charges Malawian households tend to look for additional financing from the extended family system or from external sources rather than terminate their children's schooling.

b) Private School Attendance

Another indication of the apparent willingness to pay is perhaps seen in what families actually do when faced with a more expensive (private) alternative to public education. Families who send their children to a more expensive school must be both willing and able to bear the higher costs.

The sample includes students drawn from the only private secondary school in Malawi. These students represent about 11 percent of the sample students, which is comparable to the population share (12 percent) of private students in secondary schools nationwide (see Appendix Table A.3).

Table 9 compares the sample characteristics of secondary students in private and state or aided schools. The higher expenditure of private students, both for fees and other items, has been noted before. In terms of academic characteristics, the data indicate that for both sexes, a large

Table 9: Mean Sample Characteristics of Secondary Students In Private And State Or Aided Schools, By Sex, Malawi, 1983

Characteristic	Male		Female	
	Private	State/Aided 1/	Private	State/Aided 1/
Number of observations	39	570	49	233
Schooling Expenditure (Kwachas p.a.)				
Fees 2/	152	93	127	88
Non-Fees	240	128	209	137
Total	392	221	336	225
Personal And Academic				
Form II (%)	63.2	54.8	79.2	57.5
Age (years)	18.5	19.5	17.7	17.9
Repeater in Primary School (%)	69.4	75.5	68.1	61.1
Repeater in Secondary School (%)	11.8	6.6	43.8	7.8
Aspiring to complete University (%)	79.0	64.2	85.7	72.3
Parents' Education				
Father completed at least Primary School (%)	84.9	45.9	86.1	77.8
Mother completed at least Primary School (%)	55.9	27.0	82.6	48.2
Other Family Background				
Father's Annual Income ('000 Kwachas)	1.7	1.0	2.3	1.5
High Asset Ownership (%)	42.1	19.9	55.1	36.2
No. of Siblings	7.0	6.5	7.2	6.9
No. of Siblings in School	3.7	3.3	3.7	3.8
Urban Residence (%)	56.4	23.6	56.3	47.2
Family lives in Northern Region (%)	61.5	32.5	51.0	7.7
Financing Circumstances				
Scholarship holder (%)	2.9	14.9	9.3	10.8
Financed chiefly by Father (%)	71.4	48.5	60.5	60.4
Financed by more than one Relative (%)	30.8	51.7	47.9	49.6
Financed through External Loans (%)	14.3	39.3	13.0	30.0

1/ In terms of expenditure, students in these two types of school do not differ much.

2/ Includes tuition and boarding charges, examination and club fees.

proportion of all students have been repeaters at primary school. 1/ However, the incidence of repetition is much lower during secondary schooling particularly for students in state/aided schools. Apart from reflecting the probability that 8th grade screening effectively selects only better students for secondary schooling, this result also suggests that at the secondary level

1/ A repeater is defined as a student who takes more than the usual number of years to complete a particular cycle of schooling; 8 years in the primary cycle, and 2 years each in the lower and upper secondary cycles.

itself, continuation is generally contingent upon good academic performance. Nevertheless, some drop-outs from state/aided schools probably continue their studies in the private sector, particularly if university education is their (or their families') ultimate objective; hence the higher proportion of privately-enrolled students having a history of repetition during secondary schooling, and the higher proportion among them wishing to complete university education. This also indicates the willingness of the private school to enroll repeaters so long as they are willing to pay the higher charges.

The data confirm that students in the private school come largely from more advantaged backgrounds; a higher proportion of their parents have had at least primary education, the reported earnings of their fathers are higher and more of them belong to families with high asset ownership. Not surprisingly, fewer of them depend on relatives or external loans for financial support. Another striking feature of the data is that the clientele of the private school is drawn largely from students whose families live in the same region as the school, that is, the Northern region; presumably the higher fees are compensated for by the reduction in transport costs.

To standardise simultaneously for all the factors that might be associated with private school attendance, we use multiple regression, in which the dependent variable is defined as a 0-1 dummy variable corresponding to whether or not the respondent attends private school. Due to the dichotomous nature of the dependent variable, we use the logit model which has the form given in equation (1) in section IV above. The regression results appear in Table 10. The variables used are defined in Table A.4. Given the small number of observations available, and the fact that some variables, such as family wealth and parents' education, are highly correlated, it was necessary to be selective in the choice of independent variables. Bearing in mind

Table 10: Maximum Likelihood Estimates Of The Correlates Of Attendance At Private Secondary School, Malawi, 1983

Independent Variable	Dependent Variable = Attends Private School Sample Mean	Logit Coefficient	Marginal Effect 1/
Intercept	- (4.78)	-4.526*	-
Male	0.70 (1.10)	-0.60	-0.04
Repeater in Secondary School	0.09 (2.03)	1.22*	0.08
Aspires to Complete University	0.69 (1.45)	0.89	0.06
High Asset Ownership	0.26 (3.14)	1.57*	0.10
Total No. of Siblings	6.47 (0.54)	-0.05	-0.003
Residence in Northern Region	0.31 (4.10)	2.26*	0.15
Mean of Dependent Variable		-	0.07
D - value 2/		0.12	-
-2 log likelihood		122.35	-
N	320	-	-

Note: Asymtotic t - statistic in parenthesis; * = significant at 5%.

1/ Calculated according to $\frac{\partial P}{\partial X_i} = B_i (1-P)P$ using the sample mean value for P.

2/ This statistic is approximately the equivalent of R^2 in OLS regression (Harrell, 1980).

this shortcoming, the results indicate that the most important correlates 1/ of private schooling include "repeater in secondary school", "high asset ownership" and "residence in Northern region"; all three variables have the expected signs and are statistically significant at 5 percent or better. Whether or not the student aspires to university education

1/ We hesitate to use the word "determinants" to describe the estimated relationship because the real choice may not be between private and non-private schools, but rather between private schooling and no schooling. For this reason it is probably more appropriate to interpret the regression as a descriptor of the kinds of students who do enroll

influences private school enrollment in the expected direction, but the coefficient is not statistically significant at the 10 percent level.

Another way of interpreting the regression results is provided in Table 11 which contains the predicted probabilities of attending the private school for various student sub-groups. These probabilities are calculated by evaluating equation (1) at X_i values describing the sub-groups. X_i's that are not obviously characteristic of any sub-group such as "male", "aspires to complete university" and "total number of siblings", are assumed to have the sample mean values.

Table 11: Predicted Probabilities Of Attending Private Secondary School, Malawi, 1983

(Percent)

Home Region 1/ / Repeater Status	Family Background 1/	
	Poorer	Richer
Northern Region		
Repeater	24.1	60.3
Non-repeater	8.5	30.9
Other Region		
Repeater	3.2	13.7
Non-repeater	1.0	4.5

Source: Table 10.

1/ Poorer students come from families which own no motorized vehicle; richer

The data in Table 11 reveal several interesting points. Willingness to pay the high fees for private education is largely confined to the richer group of students residing in the Northern region. In other words, the combined cost of fees and transport is probably too high for students from the Central or Southern regions, even for students from richer backgrounds; this result is expected given the more abundant supply of schools in these regions.

The higher probability of private school attendance among repeaters has been noted earlier. Nevertheless, repeaters from poorer backgrounds have a very much smaller chance of being able to continue their studies at the private school. This implies that when continuation is contingent upon the payment of the private school level of fees, many of them would simply drop out of school altogether, even when higher fees are mitigated by the smaller transportation costs, as in the case of repeaters from poorer homes in the Northern region. Here we should emphasize that these students are "poorer" only in comparison to their secondary school peers, since students whose families appear to be able to pay even the non-private level of fees must be considered relatively well-to-do in the context of Malawi's income distribution. 1/

1/ According to one knowledgeable estimate, less than 10 percent of Malawian households have an income exceeding K400 p.a. in 1979/80.

VII. Economic Rationale for the Willingness to Pay

Although education in Malawi involves considerable direct cash outlay, households appear to be willing to pay, as the above discussion show. This strong demand for education largely reflects economic considerations in schooling decisions, although cultural factors may also be important, particularly in the Northern region. 1/ The strong incentive to obtain schooling can be seen, for example, in the fact that a large number of Standard VIII pupils are willing to repeat the grade in order to obtain the Primary School Leaving Certificate. Such a certificate in hand affects what can be earned in the job market; for example, according to the government's minimum wage rulings, a clerical employee in the tobacco handling industry who has passed Standard VIII is entitled to a minimum wage of K 0.62 per day compared to only K 0.43 per day for employees without this qualification (World Bank, 1981, Table 20, pp. 33).

The economic incentives to obtain schooling are probably also reflected in students' expectations. For secondary students the survey questionnaire raised information on their expectations of the earnings associated with two levels of secondary school qualifications, both at the start of working life (Y_o) and five years later (Y_5). The p.a. growth rate (g) in expected earnings can thus be calculated according to:

$$(5) \qquad g = [Ln(Y_5/Y_o)]/5$$

Table 12 displays the data on Y_o and g. In general students' expectations of the starting earnings at both the Junior Certificate and Malawi Certificate

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1/ Heyneman (1972, pp. 46) documents that primary schooling in the Northern region "may have become internalized with the local society", being now viewed almost like a traditional form of apprenticeship, and even as a necessary part of initiation and passage into adult society.

levels are comparable to what is actually being paid to new employees in the public sector. However, their expectations of the rate of increase in earnings appear to be overly optimistic; for example, students expect that Junior Certificate holders' earnings would grow by 12.3 percent p.a. compared to an actual rate of 7.2 percent p.a. in government employment. Even allowing for the possibility that public sector wages do not represent conditions in the private sector, these expectations are probably still too optimistic, 1/ particularly among females. One reason for students' high expectations may be their lack of knowledge about labor market conditions; these expectations may reflect more their wish for a high paying white-collar job, than a realistic assessment of what they can actually earn when they eventually enter the labor market.

The data in Table 12 permit calculations of the expected private returns (before tax) to secondary schooling using the "elaborate method" (Psacharopoulos, 1982). However, since the only pieces of information at our disposal are direct costs, expected starting earnings and the expected growth rate of earnings, several assumptions are required to accomplish the calculations. In particular, in the base case we assume that the expected staring earnings grow at the corresponding expected rates until age 30, after which the earnings profile continues on a plateau until retirement at age 60. In calculating the returns to lower secondary schooling, we also assumed that the expected foregone earnings profile is the same as that associated with the actual earnings of public sector employees with Standard VIII qualifications. The direct cost is assumed to be K230 p.a. at all levels of secondary schooling (see Table 2).

1/ Between 1977 and 1978, the average nominal earnings of employees in the private sector grew at approximately 9.3% (Malawi Government, National Statistical Office).

Table 12: Expected And Actual Mean Annual Earnings And Their Growth Rate, By Educational Qualification And Sex, Malawi, 1983

Qualification/Sex	Secondary Students' Expected Annual Earnings		Actual Earnings in Public Sector 4/	
	Mean 1/ (Kwacha) (1)	P.a. Growth Rate (%) (2)	Mean 1/ (Kwacha) (3)	P.a. Growth Rate (%) 5/ (4)
Standard 8 2/				
Male	-	-	-	-
Female	-	-	-	-
Average	-	-	312	8.3
Junior Certificates 3/				
Male	457	10.5	-	-
Female	413	14.1	-	-
Average	435	12.3	483	7.2
Malawi Certificate of Education 3/				
Male	717	11.1	-	-
Female	737	16.3	-	-
Average	727	13.7	627	6.9

1/ With no working experience.

2/ Our survey did not raise information on secondary students' expectations on what is earned if they only had a Standard VIII qualification

3/ The Junior Certificate is obtained by passing an examination at the end of Form II; the Malawi Certificate of Education, at the end of Form IV.

4/ Source: Personal communication from Mr. L.F. Golozi, Senior Statistician, Economics, of the National Statistical Office, Malawi.

5/ Calculated on the basis of starting salary and salary after one year's service.

The results, under base case and alternative assumptions, appear in Table 13. Given that students' expected earnings growth rates are much higher than the actual growth rates, as noted above, it is tempting to draw the conclusion that these results have overestimated the private returns to schooling. However, since rate-of-return calculations use data on relative earnings rather than absolute earnings, such a bias would be more likely only when the relative rates of growth of expected earnings between different education levels are over-optimistic compared to that of actual earnings for the corresponding education levels. As it turns out, this bias is present to a greater degree among females for both levels of secondary schooling, which explains their higher expected rates of return for both levels of schooling, compared to their male counterparts.

A comparison with estimates made elsewhere shows that the expected rates of return presented here are in fact within reason, and may even be under estimated. For example, a two year tracer study of 1976 secondary school leavers indicates that the private rate of return varies between 31 and 50 percent, depending on the assumptions about the level of unemployment over a working lifetime (Heyneman, 1980, pp. 22-34). 1/

The sensitivity analysis in Table 13 shows that if different growth rates of earnings are assumed, expected returns decline quite substantially, but nevertheless remain high. For example, if the expected earnings of lower secondary school leavers (Y_j) grow at the same rate as that of primary school leavers (Y_p), then the private returns drop from 19.1 percent to 13.0 percent for males; similarly if the expected earnings of upper secondary

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1/ The estimation assumed a rather high alpha coefficient of 0.90. For a succinct discussion on the alpha coefficient which is defined as that portion of the earnings differential due entirely to schooling only see Psacharopoulos (1973). See also the results derived by Tan (1983b) which have been noted earlier in Section I.

school leavers (Y_m) grow at the rate of Y_j, the returns to upper secondary schooling drop from 19.2 percent to 17.4 percent. As another example (not shown in Table 13), if the actual data pertaining to public sector employees (see Table 12, columns (3) and (4)) are substituted for the expected values used in our calculations, the rate of return would be 12 percent for lower secondary schooling; and 6 percent for upper secondary schooling. Of course, these rates would be higher if we take into account the possibility that a government employee can cross over to higher salary scales during his or her career, in which case the average earnings growth rate would have been higher than that assumed here.

Table 13: Expected Returns To Secondary Education Under Alternative Assumptions By Sex, Malawi, 1983

Assumptions	Male (Percent)	Female (Percent)
Lower Secondary Education		
1. Base case	19.1	22.6
2. Y_j grows at the same rate as Y_p	13.0	7.6
3. Fees rise by K50	18.1	21.6
4. Fees rise by K100	17.2	20.8
5. Fees rise by K200	15.8	19.3
Upper Secondary Education		
1. Base case	19.2	31.1
2. Y_m grows at the same rate as Y_j	17.4	27.2
3. Fees rise by K50	18.3	30.0
4. Fees rise by K100	17.5	29.0
5. Fees rise by K200	16.2	27.2

Note: Y_p, Y_j, Y_m are students' expected earnings corresponding to primary, lower secondary, and upper secondary qualification, respectively.

In general, the rate of return evidence shows that education is an extremely attractive personal investment, particularly for post-primary students. It should be noted, however, that the perceived benefits may differ according to family background, thus implying different degrees of willingness to pay. It has been found elsewhere in the literature that parents in higher socio-economic classes perceive greater gains to their children's education than other parents (Psacharopoulos and Sanyal, 1981; 1982). Thus children from richer families not only benefit from their parents' greater ability to pay, but also their greater willingness to pay.

VIII. Conclusions and Implications

From the empirical analysis presented, two sets of conclusion may be derived. The first is Malawi-specific while the second concerns broad lessons for LDCs regarding the scope of user charge as a means of expanding education in times of economic austerity.

a) Conclusions for Malawi

The empirical results show that Malawian households are generally willing and able to pay for schooling. Analysis based on the survey data indicate that the household enrollment ratio is rather inelastic with respect to the total household financial burden of education. Households have been willing to borrow from extended family members or even from external sources to pay for the education of their children. Although school fees were raised by about 50 percent in 1982, actual drop out rates due to the increase were very low. Moreover, given a choice between no schooling and schooling in an expensive private alternative some (relatively richer) households were willing and able to opt for the latter. The economic rationale for this willingness to pay lies in the high private returns to education, particularly for post-primary education.

These findings suggest that additional private resources could possibly be tapped to supplement government funds for the sector. The increase in resources could be used to facilitate its physical expansion and/or quality enhancement. Suppose, for simplicity, that the government shifts part of the burden of financing education to private households by charging fees that are sufficiently high enough to cover non-teacher recurrent costs. The rationale for following this rule is that capital expenditures benefit the nation as a whole over a long time span, whereas other expenditures, such as for pedagogical materials benefit particular cohorts of students. To a large extent, the division of financial responsibility between capital and recurrent cost already occurs at the primary level; indeed in many instances, the cost of construction and classroom furniture is also met by private households. By contrast, in the secondary school sector the non-teacher recurrent costs are only partly met by user charges; for university education no part of these costs is at present recouped, since fees are not charged.

According to the broad guideline set out above, user charges for primary education should remain roughly at its current level in real terms, that is, rising over time only as fast as the rate of inflation. For equity reasons, however, there may be a case for increases at a faster rate for urban primary schools, since in 1982, the fee increase for these students was only 43 percent in grades 1-5, and merely 15 percent in grades 6-8, compared to 50 percent for all other grades in rural schools (see appendix A). If the 50 percent increase had also been applied to urban schools, the fees should have been 5.25 Kwachas instead of 5.00 Kwachas in lower grades, and 9.75 Kwachas instead of 7.5 Kwachas in the higher grades. In fact, since urban families are usually wealthier, the fee increase could even have been slightly higher. If, say, fees of 5.5 Kwachas and 10 Kwachas (real terms) respectively are

collected, a conservative estimate indicates that 0.2 million Kwachas would be added to existing government revenues. 1/

Another group of primary school students for whom higher fees could be considered are repeaters in grade 8. At present, many students repeat this grade serveral times in the hope of passing the requisite exams to qualify for one of the extremely limited number of secondary school places. Their presence in the system stretches classroom resources, and is responsible for the fact that student-teacher ratios in Malawi far exceed the average even for African countries. Since these students aim to enter secondary school, they are presumably willing and able to pay at least the level of fees charged in secondary schools; they thus represent an additional source of revenue for the sector. Suppose that repeaters are charged twice the rate for non-repeaters, that is 12 Kwachas in rural schools and 20 Kwachas in urban schools, it is estimated that as much as 0.4 million Kwachas could be added to existing government revenues. 2/ Further improvement could be achieved by encouraging more repeaters to enroll with the Malawi Corrospondence College, where they would pay a somewhat higher fee, for example, by instituting a maximum age limit for primary school attendance or by limiting the number of times a student may take the eighth grade examination.

For secondary education, application of the general guideline of recovering non-capital costs suggests that fees should increase moderately in real terms. For example, if the non-teacher recurrent costs are con-

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1/ The calculation assumes that 70000 students attend grades 1-5 in urban primary schools, and 25,000 attend grades 6-8. These data correspond to enrollment in 1980/81 (Malawi government, 1981). The total primary school enrollment (assisted schools) was 755,000.

2/ Based on 1980/1981 statistics (Malawi Government, 1981). There were 5,000 grade 8 repeaters in urban schools and 42,000 in rural schools.

servatively defined to include only materials, food stuffs, equipment, fuel and other consummables, it is estimated that the 1982-83 level of user charges recouped only 82 percent of these costs (see Malawi Government, 1983, pp 81 and 83). The estimated shortfall of 65,000 Kwachas could thus have been covered by a real increase of only 4 Kwachas per student, given the 1982-83 student population of 17,000. However, if all non-teacher recurrent costs 1/ are included, the required real increase would have to be over 25 Kwachas per student. For illustrative purposes, suppose that fees increase by 10 Kwachas. Since the social demand for secondary education is extremely strong, few students would probably discontinue school following this increase. Moreover, since it implies less than a 5 percent increase in the unit private burden of education, the empirical analysis in earlier sections also indicate that the resulting decline in enrollment would be small. For the government, this fee increase would generate an additional 0.2 million Kwachas. 2/

Thus, in total, as much as 0.8 million Kwachas could be generated via user charges if the suggested price increases for secondary and primary schools are implemented. This sum represents 18 percent of the 1982-83 government budget for primary education or 11 percent of the budget for secondary education (see appendix Table A. 2). The increase would cover the operating cost of an additional 38,000 primary school places or 3500 secondary school places. 3/ Since the social rate of return is higher for secondary

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1/ Excludes grants and subscriptions which are channeled to mission schools.

2/ Assuming there are 17,000 secondary school students (see Appendix Table A.2).

3/ Assuming that school quality remain at existing levels. Alternative uses for the additional resources could include both quality improvements and quantity increases, the precise allocation depending on an evaluation of returns to quality or quantity investments.

education, expansion should, however, be concentrated at the latter level.

As for university education, if the same principle of recouping non-teacher recurrent costs is also adhered to, then a radical departure from existing policies would be called for, namely introducing fees where none existed before. The precise level of these fees remains to be estimated from more detailed data than are available in the source (Malawi Government, 1983) cited above. Nevertheless, even before taking the big step of introducing fees, some movement toward cost recovery can be made by discontinuing the existing policy of providing all students with stipends, free food and accommodation. Since these costs could easily amount to 400 Kwachas per student, abolition of such subsidies would enhance government revenues by 0.7 million Kwachas, which would finance the running cost of over 2500 secondary places. 1/ The suggested reduction in subsidies would probably not affect university enrollment in that many students would still continue their studies, since the private returns to this level of education would remain enormous (see Tan 1983b). The government could, however, go further by introducing user charges, since such a move would not only target cost recovery policies in the area of greatest potential, but also achieve greater equity.

Although a full treatment of the equity implications of user charges is beyond the scope of this paper, there are, however, a few additional cautionary remarks that have their place here. As seen in the empirical

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1/ According to the Bath Report prepared for the Government of Malawi, the unit cost of providing student living and stipends was 400 Kwachas in 1981. The number of university level students is assumed to be 1723 (Malawi Government, 1981).

evidence in earlier parts of this study, schooli ıg expenditure lies beyond the immediate influence of the household. The existing level of user charges, let alone further increases, implies a heavier burden upon poorer households than on richer families, a disadvantage which is exacerbated by the fact that most poor families are larger. In the face of higher charges, poorer households may respond by putting fewer of the eligible children in school, or even by removing some from school. They may also accommodate the higher user charges by relying more heavily on extended family members and external loans. They are, however, placed at a distinct disadvantage when it boils down to a choice between no schooling and schooling in an expensive private alternative; while the richer household can afford the latter alternative, the poorer household cannot. In this setting, any new policy that raises the private burden of education should be accompanied by measures to minimize inequity, for example, via scholarships targetted for indigent students from rural households; at the university level, student loans (see Woodhall, 1983) could be made available to widen access.

These measures would probably enhance the political viability of the suggested change in pricing policies in the sector. Unfortunately a full assessment of the political repercussions of these changes cannot be attempted using the data on which this study is based. In particular, our assessment of the willingness of households to pay is based on what we know from their past behavior. Since many already borrow to finance their children's education, they may be approaching a threshold in tolerating the existing burden. Students' responses to contingency questions indicate, moreover, that the larger the hypothetical fee increase, the lower the proportion who will remain in school. Even discounting the usefulness of their answers, and recalling

that the private returns to education would remain high, particularly for post-primary schooling, these contingency responses nevertheless strike a note of caution.

While efforts are being directed towards tapping additional private resources, it is perhaps equally important to maximise the efficient use of resources already available. One obvious way in which an improvement can be achieved is by correcting imbalances in the pattern of private schooling expenditure. For example, public secondary school students, when compared to their private school counterparts, appear to be spending a disproportionately larger amount on school attire than on more directly pedagogical materials. Since public funds cannot make up for the shortfall in expenditure on learning materials, it is probably necessary to encourage students to alter their expenditure patterns. Undoubtedly, for those more familiar with local conditions in Malawi, there may be other similar ways to improve efficiency, but the example cited here suffices for illustrative purposes.

Finally, to strengthen the role and effectiveness of user charges, the management of school fees should increasingly be decentralized. Thus, as for primary education, local and possibly even school authorities in the secondary education sector, should be given greater autonomy in the collection and allocation of school fee funds. Naturally, as past experience has shown, such decentralization requires the introduction of checks to prevent abuses and financial irregularities. One great advantage of a change in the suggested direction is that, in strengthening parents' perceptions that their children are the immediate beneficiaries of user charges, it will reinforce, and even increase, the private willingness to pay for publicly provided education services.

b) Lessons for LDCs

One of the objectives of charging fees for public education is to relax constraints in the public budget, so that an expansion in the provision of education may be accomplished without loss in educational quality. This paper's analysis, based on data from Malawi, permits us to draw two general conclusions relevant to LDCs regarding user charges as a policy instrument.

On the demand side, the extent to which fees can be raised is larger, the lower the responsiveness of potential enrollment to fee increases, and the greater the initial excess demand. In Malawi this responsiveness was found to be relatively low. Such a characteristic is probably common to most other LDCs since the private returns to education are high compared to returns to alternative personal or household investments. By contrast, the excess demand for education is likely to differ among countries as it is partly determined by the initial supply of places. These demand-side considerations indicate that the amount of private household resources that could be mobilized via user charges would probably vary from country to country.

On the supply side, the existing level of unit cost is a key factor influencing the possible expansion of education with the resources made available through user charges. For example, the unit cost of secondary education in Malawi is relatively high. This feature implies that a substantial increase in fees would be necessary in order to achieve an expansion in the provision of places. If the unit cost had been lower, for example, at the average for Anglophone African countries, a greater expansion could have been realized with a smaller fee increase, Figure 2 illustrates this conclusion.

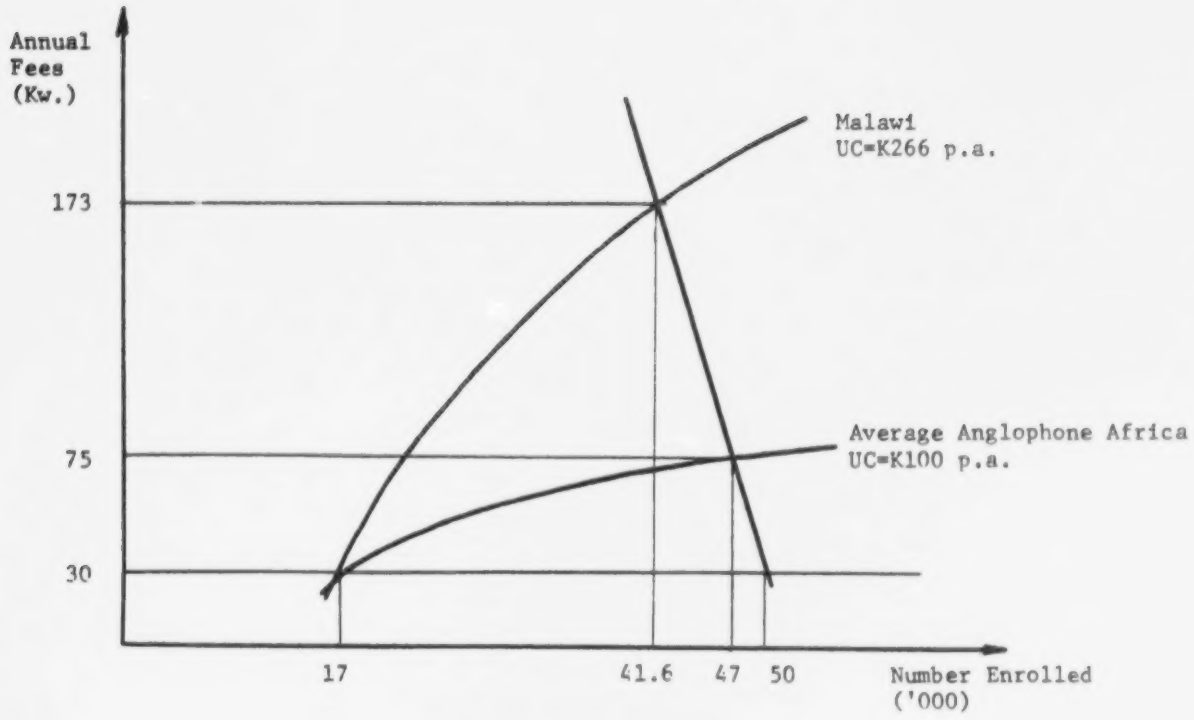


Fig. 2: Comparing Malawi to a Hypothetical Country with a Lower Unit Cost of Education

In this paper we have shown that user charges could be effective in relaxing constraints in the government budget to permit expansion in the provision of public education. Although it is only one among a variety of policy options, user charges may be an important policy instrument to consider when the conditions in specific country contexts are appropriate.

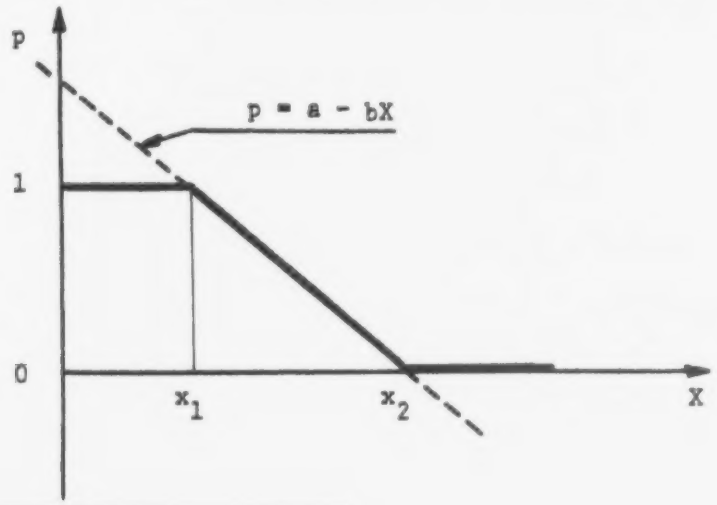
APPENDIX A

METHODOLOGICAL NOTE

In estimating the effect of educational cost on household enrollment (Section V in the report), some econometric problems arise over the way in which the dependent variable should be specified for regression purposes. This note evaluates two alternative specifications; in one, the dependent variable is defined as P, the proportion enrolled among children of eligible ages in a household, and in the second, it is defined as the log-odds of P, that is, Ln [P/(1-P)]. For both specifications, OLS is used to estimate the regression equation. We show below that despite problems with using the first specification, the resulting estimates are more reliable than those obtained from the second specification, and are therefore to be preferred.

Theoretical and Data Considerations

Since P is defined as a proportion, its value is necessarily constrained to fall in the range 0-1. In the first specification where the equation estimated is P = a - b X 1/, the predicted values of P may, however, fall outside the 0-1 range, as indicated in the diagram below. This problem



1/ For the econometric experiments below, X is represented, for simplicity, by Ln (Total Fees) and a dummy variable indicating urban-rural residence.

is resolved by stating the required relationship as

$$(1A) \qquad P = \begin{cases} 1 & \text{for } 0 < X < x_1 \\ a - bX & \text{for } x_1 \leq X \leq x_2 \\ 0 & \text{for } x_2 < X \end{cases}$$

There still remains, however, the problem of heteroscedasticity since the residual variance is likely to be larger for observations where X is outside the $x_1 - x_2$ range. The existence of this problem violates the constant variance assumption required to obtain estimates with BLUE (Best Linear Unbiased Estimator) properties. In particular, the estimated standard error of the regression coefficient may be biased, although the coefficients themselves remain unbiased (Chiswick & Chiswick, 1975). Bias in the standard error influences the outcomes of tests for statistical significance; for example, if an upward bias exists, the standard error may indicate that the corresponding coefficient is statistically insignificant, when in fact the opposite conclusion may have been drawn from an unbiased standard error. It is likely, however, that for coefficients with very small estimated standard errors (or large t-ratios), their statistical significance would remain essentially unaffected even if the test had been performed using unbiased standard errors. As it happens, the estimated standard error for the coefficient of the variable of most interest to this paper, Ln (Total Fees), turns out to be extremely small. Thus, the conclusion that it exerts a statistically significant influence on household enrollment would probably still be true in the absence of heteroscedasticity. As indicated in the text, this conclusion is supported by the results obtained after correction for heteroscedasticity using a two step weighted least squares method.

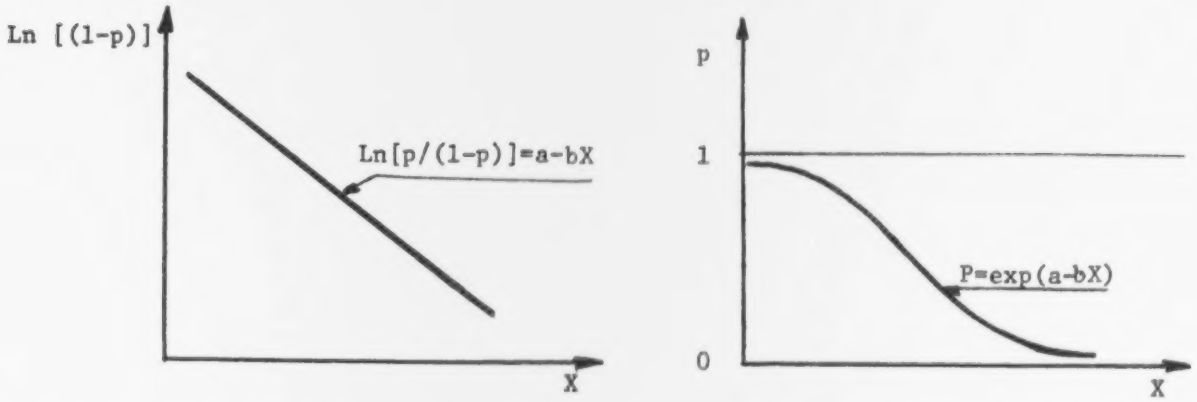
An alternative way of specifying the regression relationship is given by

(2A) $\quad \text{Ln}\,[P/(1-P)] = a - bX \qquad \text{for } (0 < P < 1)$

or equivalently,

$$P = 1/[1 + e^{-(a-bX)}]$$

The diagrams below illustrate the estimated equation.



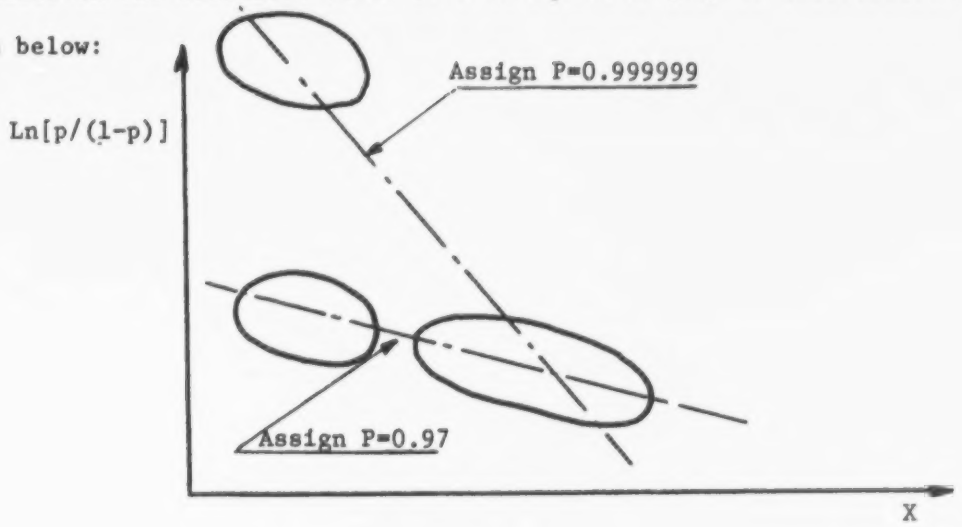
The advantage of this formulation is that the predicted P's all fall within the 0-1 range; moreover, the problem of heteroscadasticity is now probably largely absent.

The theoretical advantages are, however, outweighed by practical problems in implementing the regressions. These problems arise because the data set contains some observations for which P is either greater or equal to one, 1/ obviously reflecting measurement errors. It is, however, reasonable to interpret these values of P as indicating situations where all eligible children are enrolled. Nevertheless, in transforming P to Ln [P/(1-P)], a value of P = 1 cannot be entered. An obvious solution is to assign P a value close to one. There is no theoretical reason to prefer one value of P, close to one, to another value of P, also close to one. However, the precise value of P, chosen arbitrarily, is likely to exert a powerful effect on the regression results. To illustrate, consider the following transformation of P to Ln[P/(1-P)] based on alternative values of P close to one:

1/ Since the data is constructed from samples of primary and secondary school children, there is no observation in the data sets for which P is zero or less.

P	Ln [P/(1-P)]
.97	3.48
.98	3.89
.99	4.60
.999999	13.82

The effect on the estimated value of b in equation (2A) is illustrated by the figure below:



Most of the observations for which P is equal to or greater than one occur in households where X_t, the educational burden, is small. Thus, the smaller the value assigned to P for these observations, the larger the value of Ln [P/(1-P)], and, the steeper the resulting estimated slope of equation (2A). Since the difference in the results arises from what is essentially an arbitrary choice with no theoretical basis, there is no clear reason to prefer one set of estimates to another. It is tempting to avoid this problem by restricting observations to those with value of P in the $(0 < P < 1)$ range. This restriction will, however, bias the value of b downwards, since there is a selectivity bias in the exclusion rule.

The actual importance of the problem outlined above is an empirical matter, depending partly on the proportion of observations outside the $(0 < P < 1)$ range. About 12 percent of the observations in the primary sample

belong to this category; in the secondary sample, the corresponding figure is 18 percent. For both samples, these observations are numerous enough to introduce significant errors, as the experiments in Table A.7 show. For example, under alternative assumptions about the value of P when it is outside the ($0 < P < 1$) range, the estimated value of b ranges from -1.10 to -3.60 for the primary sample, when it includes all observations; and from -0.95 to -2.91 when only observations in the ($0 < P \leq 1$) range are included. The resulting elasticity estimates range from -0.43 to -1.32, and from -0.46 to -1.49 respectively.

To summarize, there are theoretical reasons to prefer specification (2A) to (1A). However, because of data characteristics, the actual implementation of the regression according to (2A) requires assumptions that lead to large errors in the resulting estimates. In the light of these errors, the specification of (1A) is preferable. The case for relying on its results is further strengthened by the fact that the OLS estimation produces bias only in the standard error of the estimated coefficient, but not in the coefficient itself. As discussed above, this error is likely to be relatively unimportant for the present purposes, given the extremely large t-ratio values associated with the coefficient of the central variable (Ln (Total Fees)) in our analysis. Moreover, after correction for heteroscedasticity using Aitken's generalized least squares method, the results remain largely the same.

Table A.1: School Fee Structure In Malawi, Before And After 1982 1/

	Before 1982	After 1982
Rural Primary		
Grades 1-5	2.0	3.0
Grades 6-8	4.0	6.0
Urban Primary		
Grades 1-5	3.5	5.0
Grades 6-8	6.5	7.5
Secondary		
Tuition	20.0	30.0
Boarding charges:		
(a) grant-aided school	30.0	75.0-100.0
(b) government boarding school	30.0	75.0-100.0
(c) government day school	75.0-100.0	75.0-100.0

1/ Source: [Thobani, 1983]

Table A.2: Government Expenditure On Primary And Secondary Education, Malawi, 1980-83 1/

Item	1980/81	1981/82	1982/83
Total Education Sector (M Kwacha) 1/	23.6	26.8	32.4
Total Public Budget (M Kwacha) 2/	207.6	269.0	274.3
Education Sector Share in Public Budget (%)	11.4	10.0	11.8
Primary Education			
Number Enrolled 3/	734,590	813,448	876,897
Total Expenditure (M Kwacha) 4/	9.2	10.2	14.3
As % of Sector Total	39.0	38.1	44.1
Per Student Expenditure (Kwacha) (i) 5/	12.2	12.5	16.3
(ii) 6/	14.3	15.7	21.3 7/
% of (ii) Recovered by Fees 6/	19.4	21.1	23.5 7/
Secondary Education			
Number Enrolled 8/	15,775	16,343	16,931
Total Expenditure (M Kwacha) 4/	3.4	3.7	4.5
As % of Sector Total	14.4	13.8	13.9
Per Student Expenditure (Kwacha)	216	226	266
% Recovered by Fees 9/	-	-	37.5
University Education			
Number Enrolled 10/	1,723	1,814	1,910
Total Expenditure (M Kwacha) 4/	5.9	6.8	7.0
As % of Sector Total	0.25	0.25	0.22
Per Student Expenditure (Kwacha)	3,452	3,749	3,665
% Recovered by Fees	0	0	0

1/ Source: Malawi Government, 1983 pp. 81. Includes only central government expenditures. Figure for 1980/81 is actual; figures for 1981/82 and 1982/83 are estimates. For all years, amount represent gross expenditure. These remarks apply to all figures citing this source.

2/ Source: Malawi Government, 1983, pp. v.

3/ Source: Malawi Government, 1981, pp. 8. For 1981/82 and 1982/83, enrollment is projected by assuming 7.8% p.a. growth rate, which is the average growth rate between 1971/72 and 1980/81; see pp. 5. Excludes private school enrollment.

4/ Source: Malawi Government, 1983 pp. 79-81.

5/ The numerator for this calculation includes only central government expenditure. A more accurate statistic is given in (ii) below. See footnote 6/ for explanation.

6/ In Malawi, central government expenditure for primary education cover mainly teacher salaries. Expenditure for consumables are financed entirely from fees, the accounts for which are separately kept, and do not appear in official sources. To calculate this unit expenditure, the numerator includes both central government expenditure and expenditure against fee revenues; the latter is derived from a personal communication from the Ministry of Education in Malawi.

7/ Estimate. Fee revenues assumed to be roughly K5 per student (see Table 1), thus generating K4.4M.

8/ Source: Malawi Government, 1981, pp. 62. Enrollment in 1981/82 and 1982/83 projected by assuming 3.6% p.a. growth rate, which is the average growth rate between 1973/74 and 1980/81.

9/ Source: Malawi Government, 1983, pp. 83. Includes school fees, boarding and examination fees.

10/ Source: Malawi Government, 1981. pp. 73. Enrollment for 1981/82 and 1983/83 projected by assuming 5.3% p.a. growth rate, which is the average growth rate between 1972/73 and 1980/81. Includes students in Bunda College, Chancellor College, Polytechnic, and Kamazu College of Nursing.

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Table A.3: Distribution Of Enrollment In Sample And Universe Populations, Malawi, 1983

Percent

	Secondary Pupils		Primary Pupils	
	Universe 1/	Sample	Universe 1/	Sample
By Sex				
Male	71.2	68.4	74.0	71.7
Female	28.8	31.6	26.0	28.3
Total	100.0	100.0	100.0	100.0
By Region				
Northern	22.5	23.6	24.8	21.6
Central	36.2	26.2	31.2	29.0
Southern	41.3	50.2	44.0	49.4
Total	100.0	100.0	100.0	100.0
By School Type				
Government	50.3	50.7	-	-
Aided	37.3	39.3	-	-
Private	12.4	10.0	-	-
Total	100.0	100.0	-	-

1/ Source: (Malawi Government, 1981, 1982).

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Table A.4: Definition Of Regression Variables

Variable Names	Definition
Dependent Variables	
Attends Private School	Dummy variable = 1 if student attends private school; 0 otherwise.
Expectation of staying on in school	Dummy variable = 1 if student expects to stay on in school when fees are hypothetically raised; 0 otherwise.
P	P is the proportion of siblings (including the respondent) enrolled among those who are eligible for schooling, that is between age 5 and 23.
Non-Fee Expenditure	The annual expenditure (Kwachas) on items such as books, supplies, transport, lunch and incidentals.
Total Expenditure	The annual expenditure (Kwachas) on above and on fees of all kinds, such as tuition, boarding, examination and club fees.
Independent Variables	
Age	Age of student in years.
Aided School	Dummy variable = 1 if student attends an aided school; 0 otherwise.
Aspires to complete university	Dummy variable = 1 if student aspires to complete university; 0 otherwise.
Aspires to next educational level	Dummy variable = 1 if student aspires to continue to the next educational level; 0 otherwise.
Boarding School	Dummy variable = 1 if student attends a boarding school; 0 otherwise.
Depends on External Loan for Schooling	Dummy variable = 1 if student depends on loan from sources outside the extended family for schooling; 0 otherwise.
Father's Income	Father's annual income ('000 Kwacha) reported by student.
Form IV	Dummy variable = 1 if student is in Form IV; 0 if in Form II.
High Asset Ownership (or Hiasset)	Dummy variable = 1 if student's family owns at least one motorized vehicle; 0 otherwise.
Male	Dummy variable = 1 if student is male; 0 if female.
Mother completed primary school	Dummy variable if student's mother had completed at least primary school; 0 otherwise.
No. of relatives providing support	Number of relatives contributing financially to support student at school.

No. of siblings in school	Number of student's siblings who are in school.
Own Income	Student's own annual income from work.
Proportion of girls among siblings	The number of girls divided by the total number of children in the student's family.
Repeater in Primary School	Dummy variable = 1 if student has taken more than 8 years to complete primary schooling; 0 otherwise.
Repeater in Secondary School	Dummy Variable = 1 if student has taken more than 2 years to complete lower secondary schooling, or more than 4 years to complete upper secondary schooling; 0 otherwise.
Residence in Northern Region	Dummy variable = 1 if student's family lives in the Northern region; 0 otherwise.
Secondary Sample	Dummy variable = 1 if the student belongs in the sample of secondary students; 0 otherwise.
Scholarship Amount	The annual amount of scholarship (Kwacha) received by the student.
School located in Central Region	Dummy variable = 1 if school is located in Central Region; 0 otherwise.
School located in Southern Region	Dummy variable = 1 if school is located in Southern Region; 0 otherwise.
Supported chiefly by father	Dummy variable = 1 if student's schooling expenses are financed chiefly by his/her father; 0 otherwise.
Total Expenses	See Equation (5) and text discussion for a description of its construction. Defined as the total schooling expenditure burden on families if all the children eligible for schooling were to be enrolled at the level for which they are eligible.
Total Cost	See Equation (5) and discussion in the text for description of its construction. Defined as the total cost burden on families if all the children eligible for schooling were to be enrolled at the level for which they are eligible.
Urban Residence	Dummy variable = 1 if student's family live in a town or city; 0 otherwise.

Table A.5: Supplementary Estimates of the Proportion of Eligible Siblings Enrolled, Under Alternative Birth Spacing Assumptions, Malawi 1983

Spacing Among Siblings Assumed To Be	One Year	Two Years	Three Years
Independent Variables			
Intercept	2.32 *	2.21 *	2.42 *
	(21.97)	(16.44)	(13.55)
Ln (Total Cost)	-0.30 *	-0.28 *	-0.31 *
	(16.89)	(11.97)	(9.41)
Father's Income ('000 Kwacha p.a.)	0.01	0.01	0.01
	(1.49)	(1.54)	(1.36)
Mother Completed Primary School	0.11 *	0.12 *	0.15 *
	(5.21)	(5.60)	(5.81)
Urban Residence	0.12 *	0.12 *	0.15 *
	(4.91)	(4.72)	(4.69)
Resident in Northern Region	0.04 *	0.05 *	0.06 *
	(2.09)	(2.37)	(2.28)
Proportion Girls Among Siblings	-0.08 **	-0.07	-0.03
	(1.94)	(1.51)	(0.62)
Number of Relatives Providing Support	0.01	0.01	0.01
	(1.10)	(1.16)	(0.70)
Depends on External Loans for Schooling	0.02	0.02	0.03
	(0.95)	(1.09)	(1.23)
Secondary Sample	0.08 *	0.07 *	0.05 **
	(3.55)	(2.74)	(1.88)
Sample Mean Value of P 1/	0.58	0.66	0.81
N	1455	1455	1455
R^2	0.21	0.15	0.11
Elasticity of P w.r.t. (Total Cost) 2/	-0.52	-0.42	-0.38

Note: * = Significant at 5% level; ** = Significant at 10% level.

1/ P is defined as the proportion of children of eligible ages who are enrolled.

2/ The elasticity is evaluated at the sample mean value of P according to $\frac{X_i \partial P}{P \partial X_i} = \frac{B_i}{P}$ where B_i is the coefficient on the Ln (Total cost) variable.

Table A.6 Supplementary Estimates of the Proportion of Eligible Siblings Siblings Enrolled in High and Low Asset Groups, Malawi 1983

Spacing Among Siblings Assumed to be One Year	Dependent Variable = P 1/
Independent Variable	
Intercept	2.32 * (21.94)
Ln (Total Cost)	-0.30 * (16.85)
Hiasset x Ln (Total Cost)	0.001 (0.30)
Father's Income ('000 Kwacha p.a.)	0.01 (1.42)
Mother Completed Primary School	0.11 * (5.13)
Urban Residence	0.12 * (4.82)
Resident in Northern Region	0.04 * (2.09)
Proportion Girls Among Siblings	-0.08 ** (1.94)
Number of Relatives Providing Support	0.01 (1.11)
Depends on External Loans for Schooling	0.02 (0.96)
Secondary Sample	0.08 * (3.53)
Sample Mean Value of P 1/	0.58
N	1455
R^2	0.22
Elasticity of P w.r.t. (Total Cost) 2/	0.52

Note: * = Significant at 5% level; ** = Significant at 10% level.

1/ P is defined as the proportion of children of eligible ages who are enrolled.

2/ The elasticity is evaluated at the sample mean value of P according to

$$\frac{X_i}{P}\frac{\partial P}{\partial X_i} = (\beta_i + \gamma_i \cdot \overline{Hiasset}) / P$$

where B_i is the coefficient on the Ln (Total Cost variable; γ_i is the coefficient on the Hiasset x Ln (Total Cost variable); and Hiasset is the sample mean of the Hiasset variable.

Table A.7: The Value of the Coefficient of Ln (Total Fees) under Alternative Specifications and Sample Definitions

SAMPLE DEFINITION	DEPENDENT VARIABLE Specification	Mean	INDEPENDENT VARIABLE Ln (Total Fees)	Urban	Intercept	R^2	N	M 1/	Elasticity w.r.t. to (Total Fees)
PRIMARY SCHOOL SAMPLE									
(i) Using only observations where (0<P<1)	Ln [P/(1-P)]	0.012	-0.42	0.60	1.54	.09	1586	0	-0.2
(ii) Using observations where (0<P≤1) and assuming that when P = 1 then	Ln [P/(1-P)]								
(a) P = .97		0.304	-0.95	0.88	3.79	.18	1734	148	-0.43
(b) P = .98		0.342	-1.04	0.92	4.14	.19	1734	148	-0.47
(c) P = .99		0.400	-1.17	1.00	4.68	.19	1734	148	-0.53
(d) P = .999999		1.189	-2.91	2.00	11.98	.16	1734	148	-1.32
(iii) Using observations where (P>0) and assuming that when P ≥ 1 then	Ln [P/(1-P)]								
(a) P = .97		0.414	-1.10	0.90	4.43	.21	1797	211	-0.46
(b) P = .98		0.466	-1.20	0.95	4.87	.22	1797	211	-0.50
(c) P = .99		0.546	-1.37	1.04	5.57	.22	1797	211	-0.58
(d) P = .999999		1.632	-3.60	2.16	14.92	.20	1797	211	-1.49
(iv) Using only observations where (0<P<1)	P	0.502	-0.09	0.13	0.84	.09	1586	0	-0.18
(v) Using observations where (0<P≤1)	P	0.545	-0.16	0.16	1.13	.17	1734	148	-0.29
(vi) Using observations where (P>0)	P	0.586	-0.28	0.19	1.62	.20	1797	211	-0.48
SECONDARY SCHOOL SAMPLE									
(i) Using only observations where (0<P<1)	Ln [P/(1-P)]	0.335	-0.01	0.41	0.25	.04	660	0	-0.004
(ii) Using observations where (0<P≤1) and assuming that when P = 1 then	Ln [P/(1-P)]								
(a) P = .97		0.761	-1.18	0.61	5.37	.15	765	105	-0.44
(b) P = .98		0.821	-1.35	0.65	6.08	.17	765	105	-0.50
(c) P = .99		0.916	-1.61	0.71	7.21	.18	765	105	-0.59
(d) P = .999999		2.185	-5.09	1.50	22.40	.21	765	105	-1.88
(iii) Using observations where (P>0) and assuming that when P ≥ 1 then	Ln [P/(1-P)]								
(a) P = .97		0.894	-1.27	0.69	5.82	.18	805	145	-0.44
(b) P = .98		0.973	-1.45	0.74	6.60	.19	805	145	-0.54
(c) P = .99		1.097	-1.73	0.82	7.84	.20	805	145	-0.64
(d) P = .999999		2.763	-5.51	1.90	24.45	.22	805	145	-2.03
(iv) Using only observations where (0<P<1)	P	0.573	-0.002	0.09	0.55	.04	660	0	-0.003
(v) Using observations where (0<P≤1)	P	0.631	-0.16	0.11	1.26	.12	765	105	-0.25
(vi) Using observations where (P>0)	P	0.655	-0.49	0.18	2.64	.10	804	145	-0.75

1/ P is the proportion of children of eligible age in a household who are enrolled.

2/ M is the number of observations for which P is not in the range (0<P<1).

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MALAWI EDUCATION FINANCE STUDY

QUESTIONNAIRE FOR PRIMARY SCHOOL PUPILS

P

Ministry of Education and Culture
Lilongwe, Malawi

Dear Pupil:

We are trying to understand your background, schooling experience and future hopes, so that we can better serve your education needs. Please complete this questionnaire as accurately and frankly as you can. Your answers will only be used for research purposes to understand how students as a group feel and think. If you come across difficult questions, leave them till after you have answered all the other questions; then return to the difficult ones. We appreciate your taking time off to complete this questionnaire.

Yours Sincerely,

B.H. Kawonga
Principal Secretary
Ministry of Education
and Culture

Primary

MALAWI EDUCATION FINANCE STUDY

QUESTIONNAIRE FOR PRIMARY SCHOOL PUPILS

Do not write in this column

General Instructions: To answer the following questions,

EITHER tick the correct answer,
OR write down the correct information.

/ / / / /
ID

Today's Date: _____ / / / / /

1. What is the name of your school? / / / /

_____

2. How old are you now? / /

____ 10	____ 14	____ 18
____ 11	____ 15	____ 19
____ 12	____ 16	____ I don't know
____ 13	____ 17	____ Other (Specify age: ____)

3. What is your sex? / /
_____ 1. Male
_____ 2. Female

4. Is your father still alive? / /
____ 1. Yes ____ 2. No

5. Is your mother still alive? / /
____ 1. Yes ____ 2. No

6. If both your parents are dead, who is your guardian? / /

____ 1. Brother	____ 5. Mother's sister
____ 2. Mother's brother	____ 6. Father's sister
____ 3. Father's brother	____ 7. Cousin
____ 4. Sister	____ 8. Other (Specify: _____)

7. Does your family live in a village, town or city? / /
(Tick only one)

____ 1. Village ____ 2. Town ____ 3. City

Primary

Do not write in this column

8. Which of the following are in your home? (You may tick one or more items)

(1 if ticked; 0 if not)

____	bed	/ /
____	newspaper	/ /
____	bicycle	/ /
____	clock	/ /
____	camera	/ /
____	motorcycle	/ /
____	motorcar or lorry	/ /
____	radio	/ /
____	electricity	/ /

9. How many workers are employed now by your family, for example a cook, a gardener, or a labourer? (Tick only one) / /

____	0	____	3
____	1	____	4
____	2	____	Other (Specify number:_____)

10. Does your family own

a house? ____ 1. Yes / /
____ 2. No

a business, or share in a business? (e.g. a duka or market stall) ____ 1. Yes / /
____ 2. No

11. Does your family use any land for farming?

____ 1. No / /
____ 2. Yes My family uses _____hectares of land for farming. / / / / /

12. Does your family own any farm animals? / /

____ 1. No
____ 2. Yes

How many cattle?	_____	/ / / / /
How many sheep?	_____	/ / / / /
How many goats?	_____	/ / / / /
How many pigs?	_____	/ / / / /
How many chickens?	_____	/ / / / /

Primary

Do not write in this column

13. What crops does your family grow to sell?
(You may tick one or more crops)

(1 if ticked; 0 if not)

____	Groundnuts	____	Cotton
____	Millet	____	Tobacco
____	Maize	____	Vegetables
____	Tea	____	Other (Specify:_____)
____	Coffee	____	My family grows no crops to sell
____	Beans		

/_/ /_/
/_/ /_/
/_/ /_/
/_/ /_/
/_/ /_/
/_/

14. Does your father (or guardian) have an income? /___/

____ 1. No The reason is because
- ____ 1. He has retired
- ____ 2. He is sick or physically disabled
- ____ 3. He cannot find any job
- ____ 4. Other (Specify:_____)

____ 2. Yes He works for
- ____ 1. The Government
- ____ 2. A private firm
- ____ 3. Himself

Write down his occupation, or describe his job briefly:_____ /___/

_____

Does he earn money in any other job?

____ 1. No
____ 2. Yes Describe briefly:_____ /___/

a)_____ /___/

b)_____ /___/

c)_____ /___/

15. Does your mother work outside the house to earn money?

____ 1. No
____ 2. Yes Please describe her job briefly:_____ /___/

_____

Primary

Do not write in this column

16. Try to fill in both blanks; if you can't, fill in at least one blank.

My father/guardian earned _____ Kwacha last month
My father/guardian earned _____ Kwacha last year

17. (See instructions above)

My mother earned _____ Kwacha last month
My mother earned _____ Kwacha last year

18. Write the correct number in the following blanks:
(Count only those still alive)

I have _____ older brothers
I have _____ older sisters
I have _____ younger brothers
I have _____ younger sisters

19. How many brothers are attending school this year? _____

How many sisters are attending school this year? _____

How many children in your family are less than 6 years old? _____

20. Did your father ever go to school?

____ 1. No
____ 2. Yes What was the highest standard he reached?
(Tick only one answer)
____ 1. Primary school, but did not complete
____ 2. Finished primary school
____ 3. Secondary school, but did not complete
____ 4. Finished secondary school
____ 5. Finished secondary school, then went for training
____ 6. Went to University
____ 7. I don't know

Do not write in this column

21. Did your mother ever go to school? /_/_/

____ 1. No
____ 2. Yes What was the highest standard she reached? (Tick only one answer)

____ 1. Primary school, but did not complete
____ 2. Finished primary school
____ 3. Secondary school, but did not complete
____ 4. Finished secondary school
____ 5. Finished secondary school, then went for training
____ 6. Went to University
____ 7. I don't know

22. At what age did you start primary school? _____ /_/_/

23. Where do you usually do your homework? /_/

____ 1. At school
____ 2. At home
____ 3. At a friend's or neighbor's house
____ 4. Outdoors
____ 5. I never do homework

When you do homework, it is usually /_/

____ 1. quiet
____ 2. noisy
____ 3. sometimes quiet and sometimes noisy

24. Who usually helps you with your homework after school hours? (Tick only one answer) /_/

____ 1. Nobody; I do it by myself
____ 2. Mother or Father
____ 3. Brother or sister
____ 4. Teacher
____ 5. Classmate or schoolmate
____ 6. Neighbour or friend
____ 7. Other (specify: _____)

Do not write in this column

25. How well have you done in school up to now? / /

____ 1. Badly
____ 2. Average
____ 3. Well

26. How well will you do on your PSLC? / /

____ 1. Badly
____ 2. Average
____ 3. Well

27. What do you think of your school compared to other primary schools? / /

____ 1. Bad
____ 2. Average
____ 3. Good

28. Do you have a scholarship or bursary this year? / /

____ 1. No
____ 2. Yes How much per year? _____ / / / /

Do not write in this column

29. Please state as accurately as you can the amount of money each of the following items cost you in 1982. Do not write in the shaded area.

Item	For the whole year	For each week
School fees		
Boarding fees		
Examination fees		
Caution money		
School/building fund		
Club fees		
Other fees (Specify:_____)		
Text books		
Other books e.g. storybooks		
Exercise books, pens and pencils		
Uniforms		
Shoes for school		
Soap and washing materials		
Spectacles		
Transport to school		
Lunch money		
Pocket money		
Other:_____		

Do not write in this column

30. Who helps to pay for you to attend school this year? (You may tick more than one person) /_/_/_/

____ 1. Father
____ 2. Mother
____ 3. Brother/s
____ 4. Sister/s
____ 5. Myself (from savings)
____ 6. In-Laws
____ 7. Uncle
____ 8. Aunt
____ 9. Cousin
____ 10. Neighbour
____ 11. Other (Specify: _____)

Who pays the most? _____ /_/_/_/

31. In 1981 did your family borrow money from a "money lender", or someone outside the family to pay for your school fees? /_/_/_/

____ 1. No
____ 2. Yes The reason is because
____ 1. The fees were too high
____ 2. My father lost his job
____ 3. Other (Specify: _____)

32. In 1982-83 school fees have been raised. Did some of your brothers or sisters stop schooling because of it? /_/_/

____ 1. No.
____ 2. Yes How many brothers stopped primary school? ____ /_/_/
How many sisters stopped primary school? ____ /_/_/

How many brothers stopped secondary school? ____ /_/_/
How many sisters stopped secondary school? ____ /_/_/

33. In 1982-83 did your family borrow money from a "money lender", or someone outside the family to pay for your school fees? /_/_/_/

____ 1. No
____ 2. Yes The reason is because
____ 1. The fees are too high
____ 2. My father lost his job
____ 3. Other (Specify: _____)

Primary

Do not write in this column

34. How much do you pay for school fees now? /_/_/
_____ Kwacha per year

If school fees are K10, would you still be in school? /_/
____ 1. Yes
____ 2. No
____ 3. Don't know

If school fees are K20, would you still be in school? /_/
____ 1. Yes
____ 2. No
____ 3. Don't know

If school fees are K30, would you still be in school? /_/
____ 1. Yes
____ 2. No
____ 3. Don't know

If school fees are K50, would you still be in school? /_/
____ 1. Yes
____ 2. No
____ 3. Don't know

35. Do you work to earn money, for example, during your free time, or your holidays? /_/_/

____ 1. No
____ 2. Yes (Tick the main way in which you earn money)
____ 1. Working in the house
____ 2. Selling in the market
____ 3. Helping on the farm
____ 4. Working in my father's/guardian's shop
____ 5. Other (Specify:_____)

How much do you earn per day? /_/_/_/_/_/
_____ Kwacha per day

How many days do you work per month? /_/_/
I work _____ days per month

Do not write in this column

36. Next year, do you think you'll still be a student? / / /

____ 1. Yes I will probably be (Tick only one)
- ____ 1. Enrolled in Form I
- ____ 2. Enrolled in MCC
- ____ 3. Enrolled to repeat grade 8

____ 2. No The main reason is because (Tick only one)
- ____ 1. My exam scores will be too low
- ____ 2. My family cannot afford to pay the fees
- ____ 3. The school I want to attend is too far away
- ____ 4. My family is against it if I continue school
- ____ 5. I'll be working to earn money for my family
- ____ 6. Other (Specify:_____

_____)

37. What do you think is the highest educational level you will eventually reach? / /

____ 1. Complete primary
____ 2. Complete lower secondary
____ 3. Complete upper secondary
____ 4. Complete University

38. What sort of job would you probably be doing 10 years from now? Please name an occupation. / / /

_____

MALAWI EDUCATION FINANCE STUDY

QUESTIONNAIRE FOR SECONDARY SCHOOL PUPILS

S

Ministry of Education and Culture
Lilongwe, Malawi

Dear Pupil:

We are trying to understand your background, schooling experience and future hopes, so that we can better serve your education needs. Please complete this questionnaire as accurately and frankly as you can. Your answers will only be used for research purposes to understand how students as a group feel and think. If you come across difficult questions, leave them till after you have answered all the other questions; then return to the difficult ones. We appreciate your taking time off to complete this questionnaire.

Yours Sincerely,

B.H. Kawonga
Principal Secretary
Ministry of Education
and Culture

MALAWI EDUCATION FINANCE STUDY

QUESTIONNAIRE FOR SECONDARY SCHOOL PUPILS

General Instructions: To answer the following questions,

EITHER tick the correct answer,
OR write down the correct information.

Do not write in this column

/ / / / /
ID

Today's Date: _____ / / / / /

1. What is the name of your school? / / / /

_____

2. Are you in Form II or Form IV? / /

____ 1. Form II ____ 2. Form IV

3. How old are you now? / / /

____ 14	____ 18	____ 22
____ 15	____ 19	____ 23
____ 16	____ 20	____ I don't know
____ 17	____ 21	____ Other (Specify age: ____)

4. What is your sex? / /

_____ 1. Male
_____ 2. Female

5. Is your father still alive? / /

____ 1. Yes ____ 2. No

6. Is your mother still alive? / /

____ 1. Yes ____ 2. No

7. If both your parents are dead, who is your guardian? / /

____ 1. Brother	____ 5. Mother's sister
____ 2. Mother's brother	____ 6. Father's sister
____ 3. Father's brother	____ 7. Cousin
____ 4. Sister	____ 8. Other (Specify: _____)

8. Does your family live in a village, town or city? / /
(Tick only one)

____ 1. Village ____ 2. Town ____ 3. City

Do not write in this column

9. In what region does your family live? /_/

____ 1. South ____ 2. Central ____ 3. North

10. Which of the following are in your home? (You may tick one or more items) (1 if ticked; 0 if not)

____ bed /_/
____ newspaper /_/
____ bicycle /_/
____ clock /_/
____ camera /_/
____ motorcycle /_/
____ motorcar or lorry /_/
____ radio /_/
____ electricity /_/

11. How many workers are employed now by your family, for example a cook, a gardener, or a labourer? (Tick only one) /_/

____ 0 ____ 3
____ 1 ____ 4
____ 2 ____ Other (Specify number:_____)

12. Does your family own

a house? ____ 1. Yes /_/
____ 2. No

a business, or share in a business? (e.g., a duka or market stall) ____ 1. Yes /_/
____ 2. No

13. Does your family use any land for farming? /_/

____ 1. No
____ 2. Yes My family uses _____hectares of land for farming. /_/_/_/_/

Do not write in this column

14. Does your family own any farm animals? / /

____ 1. No
____ 2. Yes

How many cattle?	_____	/ / / / /
How many sheep?	_____	/ / / / /
How many goats?	_____	/ / / / /
How many pigs?	_____	/ / / / /
How many chickens?	_____	/ / / / /

15. What crops does your family grow to sell? (1 if ticked; 0 if not)
(You may tick one or more crops)

____	Groundnuts	/ /	
____	Millet	/ /	
____	Maize	/ /	
____	Tea	/ /	
____	Coffee	/ /	
____	Beans	/ /	
____	Cotton		/ /
____	Tobacco		/ /
____	Vegetables		/ /
____	Other (Specify:_____)		/ /
____	My family grows no crops to sell		/ /

16. Does your father (or guardian) have an income? / / /

____ 1. No — The reason is because
- ____ 1. He has retired
- ____ 2. He is sick or physically disabled
- ____ 3. He cannot find any job
- ____ 4. Other (Specify:_____)

____ 2. Yes — He works for
- ____ 1. The Government
- ____ 2. A private firm
- ____ 3. Himself

Write down his occupation, or describe his job briefly:_____ / / /

_____

Does he earn money in any other job? / /
____ 1. No
____ 2. Yes Describe briefly:_____

a)_____ / / /

b)_____ / / /

c)_____ / / /

Do not write in this column

17. Does your mother work outside the house to earn money?

____ 1. No
____ 2. Yes Please describe her job briefly:_____

_____

/ /
/ /

18. Try to fill in both blanks; if you can't, fill in at least one blank.

My father/guardian earned _____ Kwacha last month
My father/guardian earned _____ Kwacha last year

/ / / / /
/ / / / /

19. (See instructions above)

My mother earned _____ Kwacha last month
My mother earned _____ Kwacha last year

/ / / / /
/ / / / /

20. Write the correct number in the following blanks: (Count only those still alive)

I have _____ older brothers
I have _____ older sisters
I have _____ younger brothers
I have _____ younger sisters

/ / /
/ / /
/ / /
/ / /

21. How many brothers are attending school this year? _____

/ / /

How many sisters are attending school this year? _____

/ / /

How many children in your family are less than 6 years old? _____

/ / /

Do not write in this column

22. Did your father ever go to school? /_/_/

____ 1. No
____ 2. Yes What was the highest standard he reached?
(Tick only one answer)
____ 1. Primary school, but did not complete
____ 2. Finished primary school
____ 3. Secondary school, but did not complete
____ 4. Finished secondary school
____ 5. Finished secondary school, then went for training
____ 6. Went to University
____ 7. I don't know

23. Did your mother ever go to school? /_/_/

____ 1. No
____ 2. Yes What was the highest standard she reached?
(Tick only one answer)
____ 1. Primary school, but did not complete
____ 2. Finished primary school
____ 3. Secondary school, but did not complete
____ 4. Finished secondary school
____ 5. Finished secondary school, then went for training
____ 6. Went to University
____ 7. I don't know

24. Write down the correct age in the following blanks:

At what age did you start primary school? _____ /_/_/
At what age did you finish primary school? _____ /_/_/
At what age did you start Form I? _____ /_/_/

For Form IV pupils only:
At what age did you finish Form II? _____ /_/_/
At what age did you start Form III? _____ /_/_/

Do not write in this column

25. Where do you usually do your homework? / /

____ 1. At school
____ 2. At home
____ 3. At a friend's or neighbor's house
____ 4. Outdoors
____ 5. I never do homework

When you do homework, it is usually / /

____ 1. quiet
____ 2. noisy
____ 3. sometimes quiet and sometimes noisy

26. Who usually helps you with your homework after school hours? (Tick only one answer) / /

____ 1. Nobody; I do it by myself
____ 2. Mother or Father
____ 3. Brother or sister
____ 4. Teacher
____ 5. Classmate or schoolmate
____ 6. Neighbour or friend
____ 7. Other (Specify: _____)

27. How well have you done in school up to now? / /

____ 1. Badly
____ 2. Average
____ 3. Well

28. How well will you do on your JCE/MCE? / /

____ 1. Badly
____ 2. Average
____ 3. Well

29. What do you think of your school compared to other secondary schools? / /

____ 1. Bad
____ 2. Average
____ 3. Good

30. Do you have a scholarship or bursary this year? / /

____ 1. No
____ 2. Yes How much per year? _____ / / / /

Do not write in this column

31. Please state as accurately as you can the amount of money each of the following items cost you in 1982. Do not write in the shaded area.

Item	For the whole year	For each week
School fees		
Boarding fees		
Examination fees		
Caution money		
School/building fund		
Club Fees		
Other fees (Specify:_____)		
Text books		
Other books e.g. storybooks		
Exercise books, pens and pencils		
Uniforms		
Shoes for school		
Soap and washing materials		
Spectacles		
Transport to school		
Lunch money		
Pocket money		
Other:_____		

Do not write in this column

32. Who helps to pay for you to attend school this year? (You may tick more than one person) /_/_/

____ 1. Father
____ 2. Mother
____ 3. Brother/s
____ 4. Sister/s
____ 5. Myself (from savings)
____ 6. In-Laws
____ 7. Uncle
____ 8. Aunt
____ 9. Cousin
____ 10. Neighbour
____ 11. Other (Specify: _____)

Who pays the most? _____ /_/_/

33. In 1981 did your family borrow money from a "money lender", or someone outside your family to pay your school fees?

____ 1. No
____ 2. Yes The reason is because /_/_/
____ 1. The fees were too high
____ 2. My father lost his job
____ 3. Other (Specify: _____)

_____)

34. In 1982-83 school fees have been raised. Did some of your brothers or sisters stop schooling because of it? /_/

____ 1. No.
____ 2. Yes
How many brothers stopped primary school? ____ /_/_/
How many sisters stopped primary school? ____ /_/_/

How many brothers stopped secondary school? ____ /_/_/
How many sisters stopped secondary school? ____ /_/_/

35. In 1982-83 did your family borrow money from a "money lender", or someone outside your family to pay your school fees?

____ 1. No
____ 2. Yes The reason is because /_/_/
____ 1. The fees are too high
____ 2. My father lost his job
____ 3. Other (Specify: _____)

_____

Do not write in this column

36. You are now paying K30 per year for tuition fees.

If tuition fees are K40, would you still be in school? / /

____ 1. Yes
____ 2. No
____ 3. Don't know

If tuition fees are K60, would you still be in school? / /

____ 1.
____ 2. No
____ 3. Don't know

If tuition fees are K100, would you still be in school? / /

____ 1. Yes
____ 2. No
____ 3. Don't know

If tuition fees are K200, would you still be in school? / /

____ 1. Yes
____ 2. No
____ 3. Don't know

37. Do you work to earn money, for example, during your free time, or your holidays?

____ 1. No / /
____ 2. Yes (Tick the main way in which you earn money) / /

____ 1. Working in the house
____ 2. Selling in the market
____ 3. Helping on the farm
____ 4. Working in my father's/guardian's shop
____ 5. Other (Specify:_____)

How much do you earn per day? / / / / / /
_____ Kwacha per day

How many days do you work per month? / / /
I work _____ days per month

Do not write in this column

38. Next year, do you think you will still be enrolled as a student? / / /

____ 1. Yes I will probably be enrolled (Tick only one)

____ 1. In Form III
____ 2. In University
____ 3. In MCC
____ 4. In a proprietary school (e.g. secretarial)
____ 5. In a Government training program (e.g. medical assistant)

____ 2. No The main reason is because (Tick only one)

____ 1. I will not be selected for school/university
____ 2. My family cannot afford to pay the fees
____ 3. School/University is too far away
____ 4. My family is against it if I continue studies
____ 5. I'll be working to earn money for my family
____ 6. Other (Specify:_____

_____)

39. What do you think is the highest educational level you will eventually reach? / /

____ 1. Complete Form II
____ 2. Complete Form IV
____ 3. Complete University

Do not write in this column

40. For Form II pupils:

What do you think the following will cost in Form III-IV?

	Per year	Per week	
School fees			/_/_/_/_/
Boarding fees			/_/_/_/_/
Books			/_/_/_/_/
Uniforms			/_/_/_/_/
School shoes			/_/_/_/_/
Transport to school			/_/_/_/_/
Lunch money			/_/_/_/_/
Pocket money			/_/_/_/_/
Other (Specify_____)			/_/_/_/_/

41. For Form II pupils only

What do you think a JC holder with no working experience earns?

_____ Kwacha per month /_/_/_/_/

If he has 5 years' working experience, what will he earn?

_____ Kwacha per month /_/_/_/_/

Do not write in this column

42. For all pupils

What do you think a MC holder with no working experience earns? /_/_/_/_/_/

_____ Kwacha per month

If he has 5 years' working experience, what will he earn? /_/_/_/_/_/

_____ Kwacha per month

43. For all pupils

What do you think a university graduate with no working experience earns? /_/_/_/_/_/

_____ Kwacha per month

If he has 5 years' working experience, what will he earn? /_/_/_/_/_/

_____ Kwacha per month

44. What sort of job would you probably be doing 10 years from now? Please name an occupation /_/_/_/

_____

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